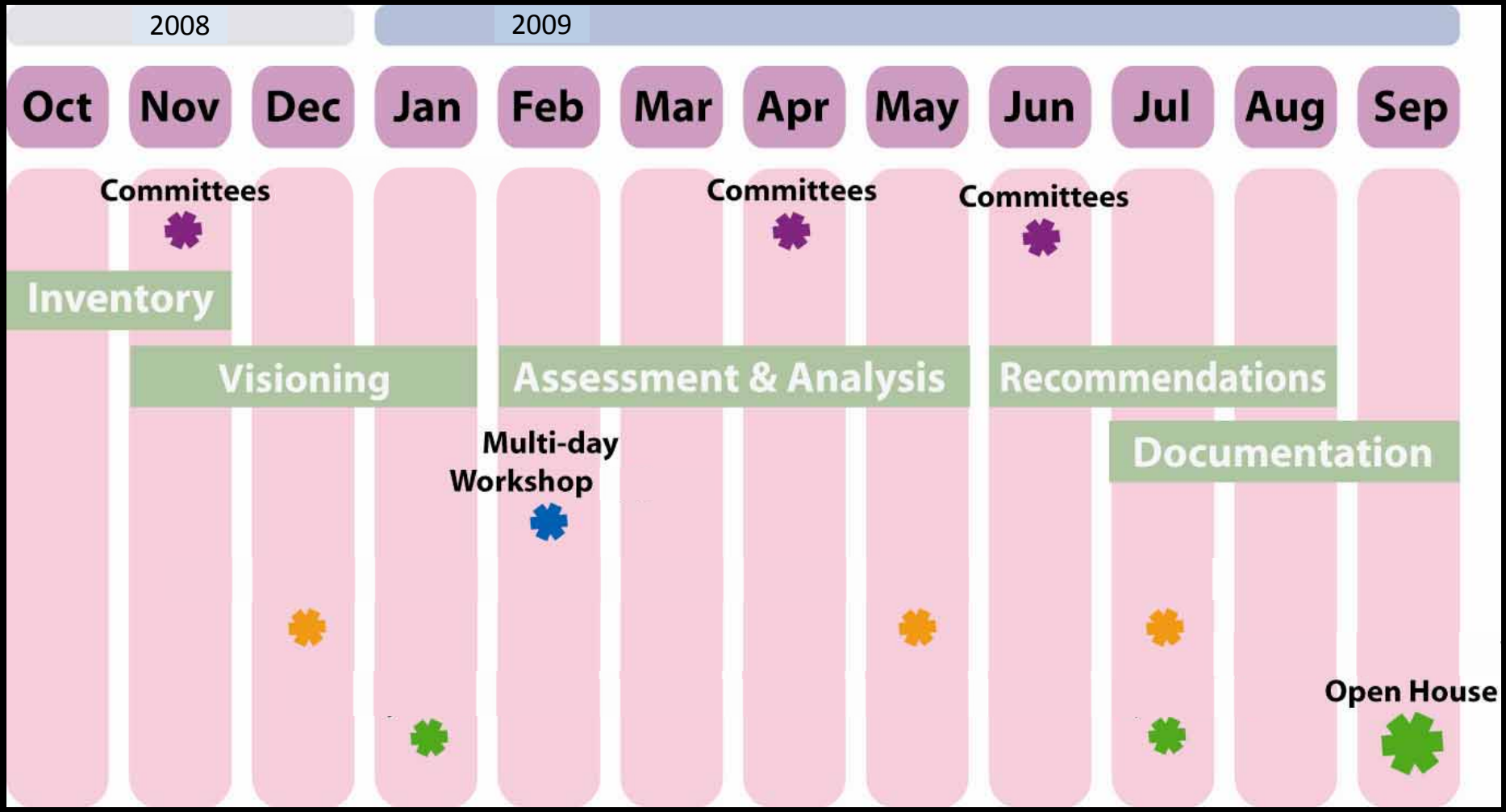
Fayette Transportation Initiative

Integrating Transportation Decisions

Process and Schedule

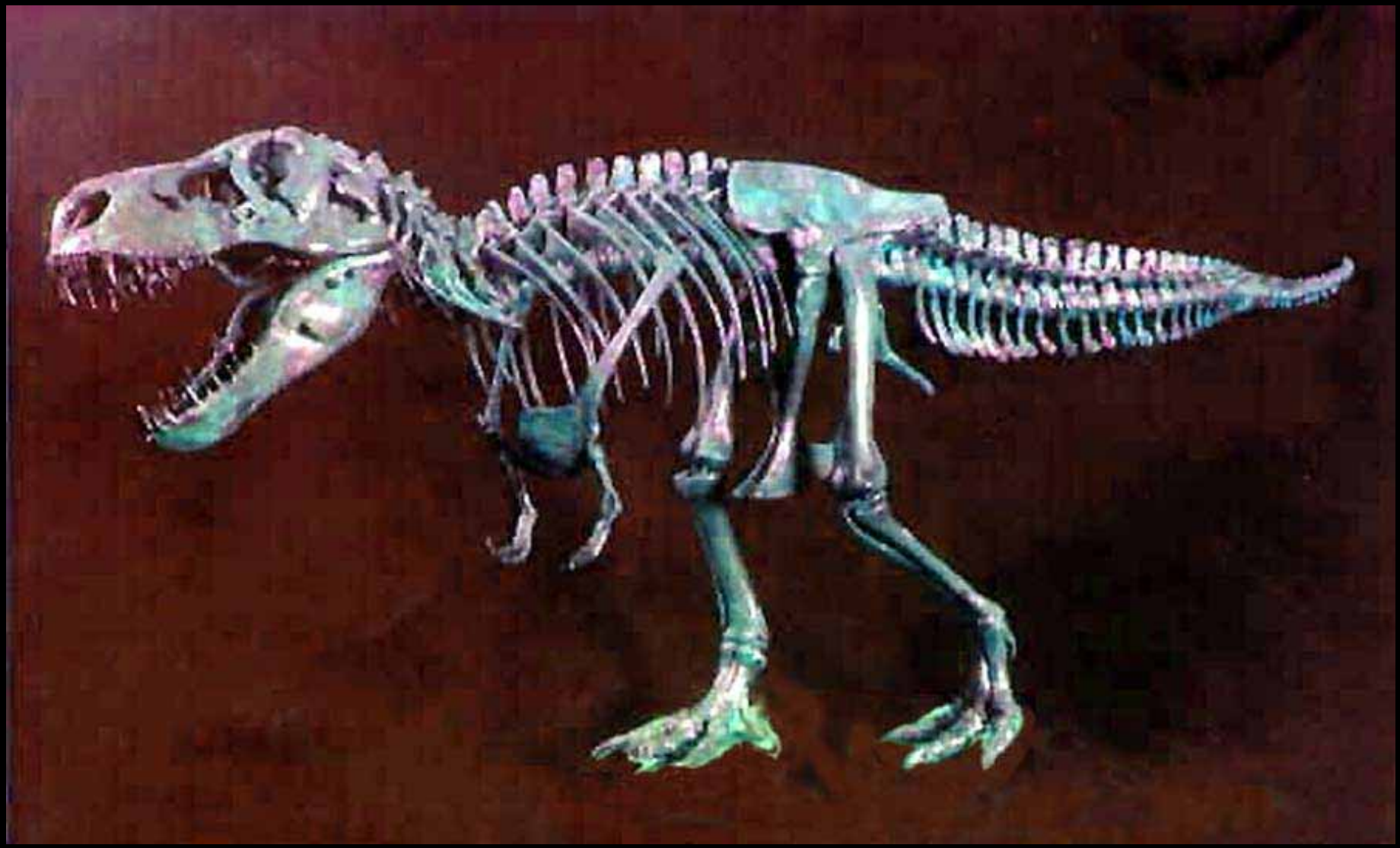


Transportation’s Role

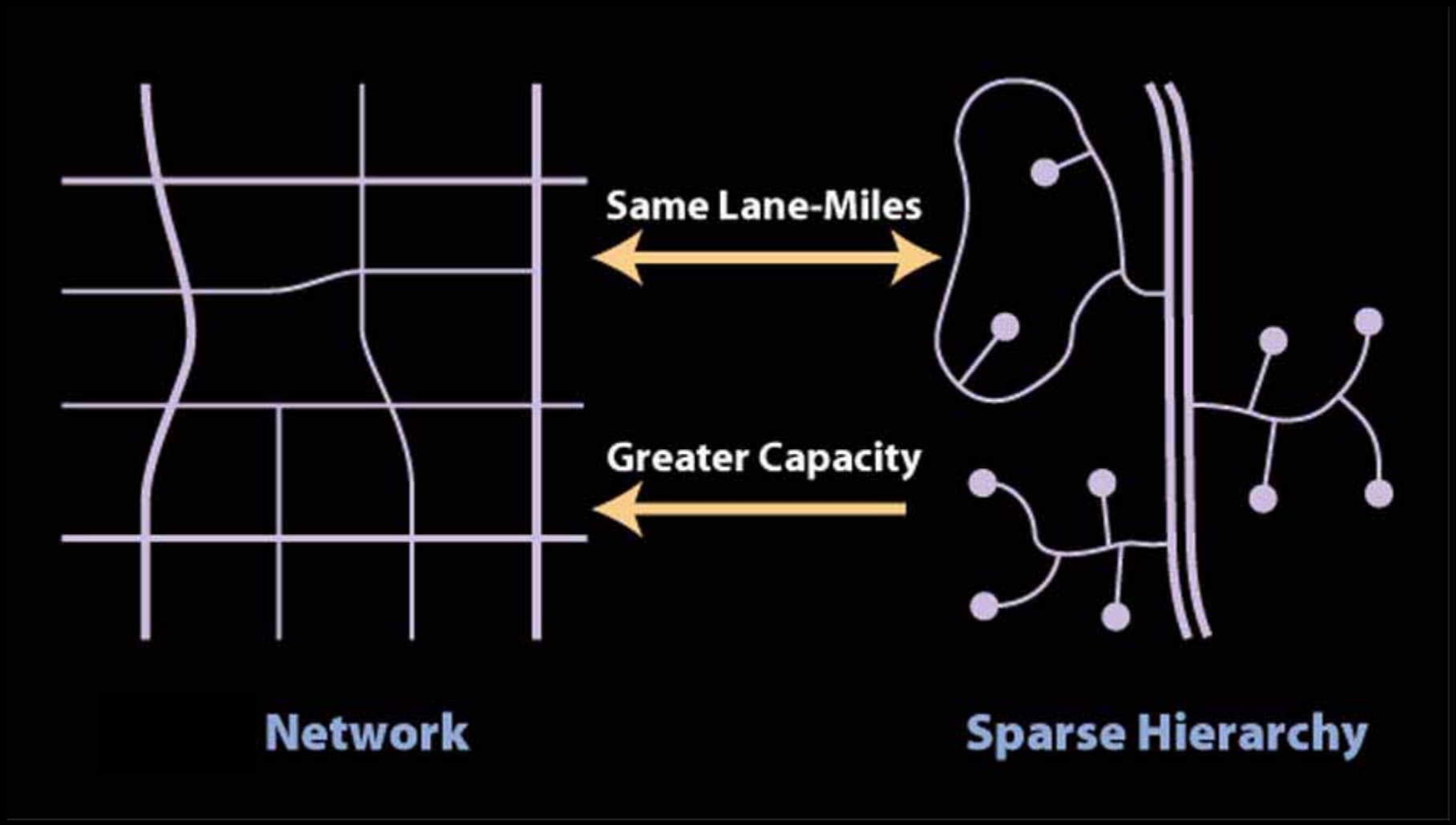
Transportation investments are powerful and far-reaching.

Transportation accounts for 19 percent of spending by the average household in America - as much as for food and health care combined.

Bone Structure

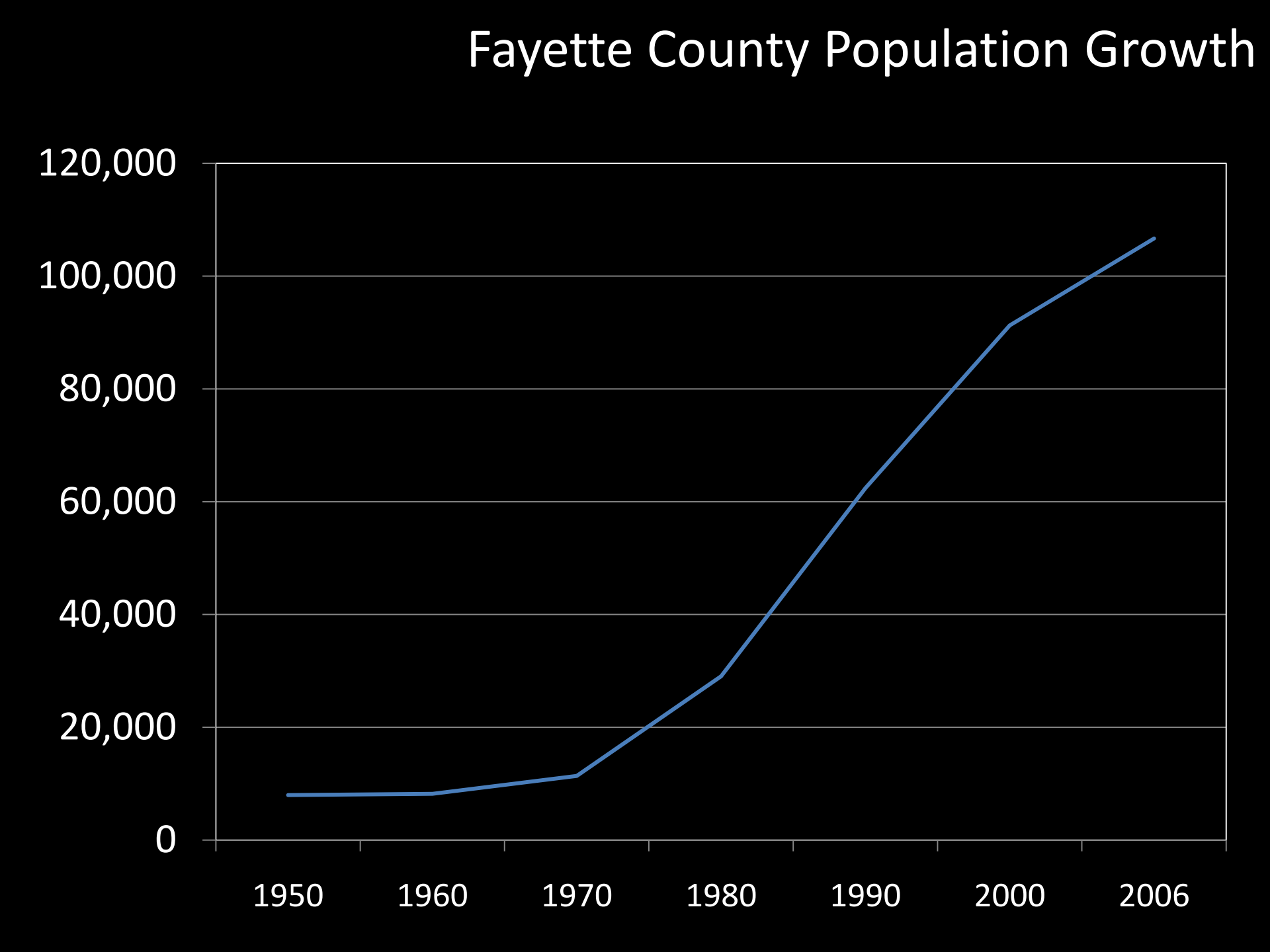


Bone Structure


Same Lane-Miles
Greater Capacity
Network
Sparse Hierarchy

How Will Fayette Grow?

Fayette County Population Growth



MAP 4 – GAIN OF RESIDENTIAL LAND 1999-2005

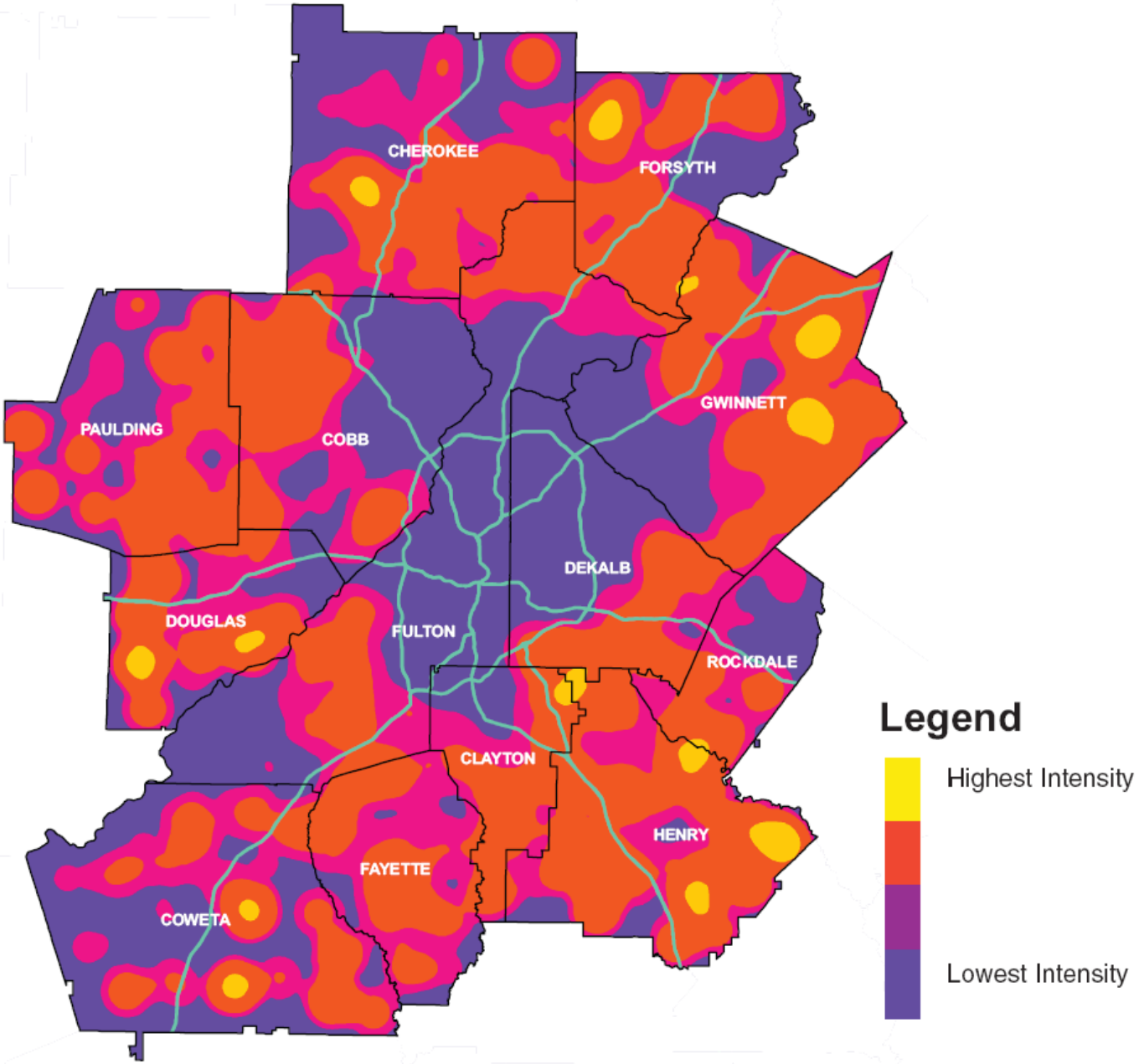


TABLE L-1
EXISTING LAND USE DISTRIBUTION, SUMMER 2003
UNINCORPORATED FAYETTE COUNTY

Land Use	Acres	Percent of Area
Residential	42,990	45.61%
Commercial & Office	516	.55%
Industrial	581	.62%
Public/Institutional	2,048	2.17%
Transportation/Communication/Utilities	92	.10%
Park/Recreation/Conservation	1,466	1.55%
Agriculture & Forestry	24,701	26.20%
Undeveloped	21,870	23.20%
Total Acreage	94,264	100.00%

Source: Fayette County Planning Department

Fayette Commute Patterns

Live and Work in Fayette	16,997
Live Elsewhere, Work Here	18,059
Live Here, Work Elsewhere	28,254

Preliminary County Goals

provide **Safe and Balanced Choices**

develop **Regional Strategies**

support vision for **Positive Growth**

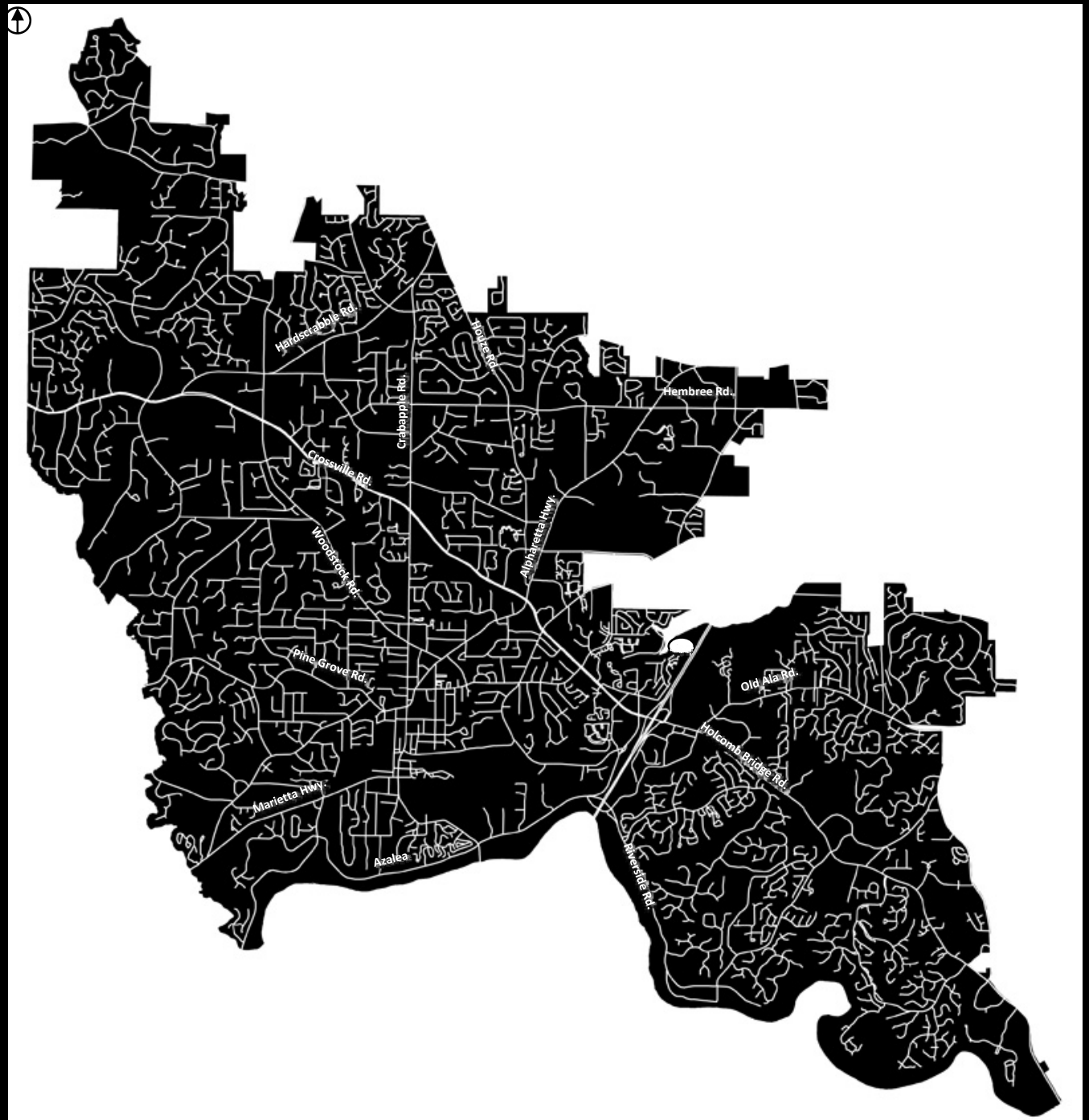
maintain **Fiscal Sustainability**

preserve **Community Character**

create **Desirable Places for All Citizens**

Technical Discussion #1
How Do We Develop Network?

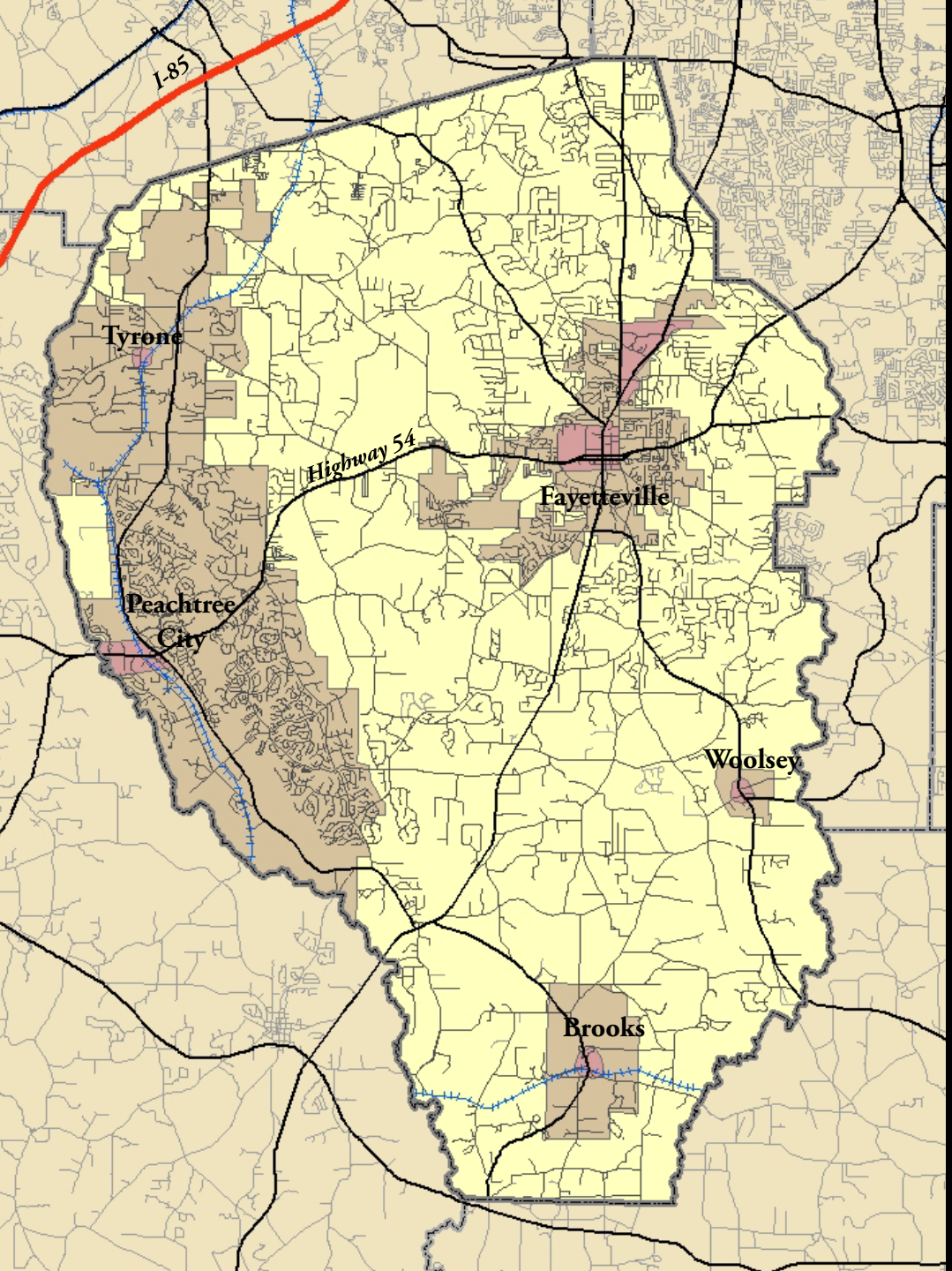
Roswell: Network



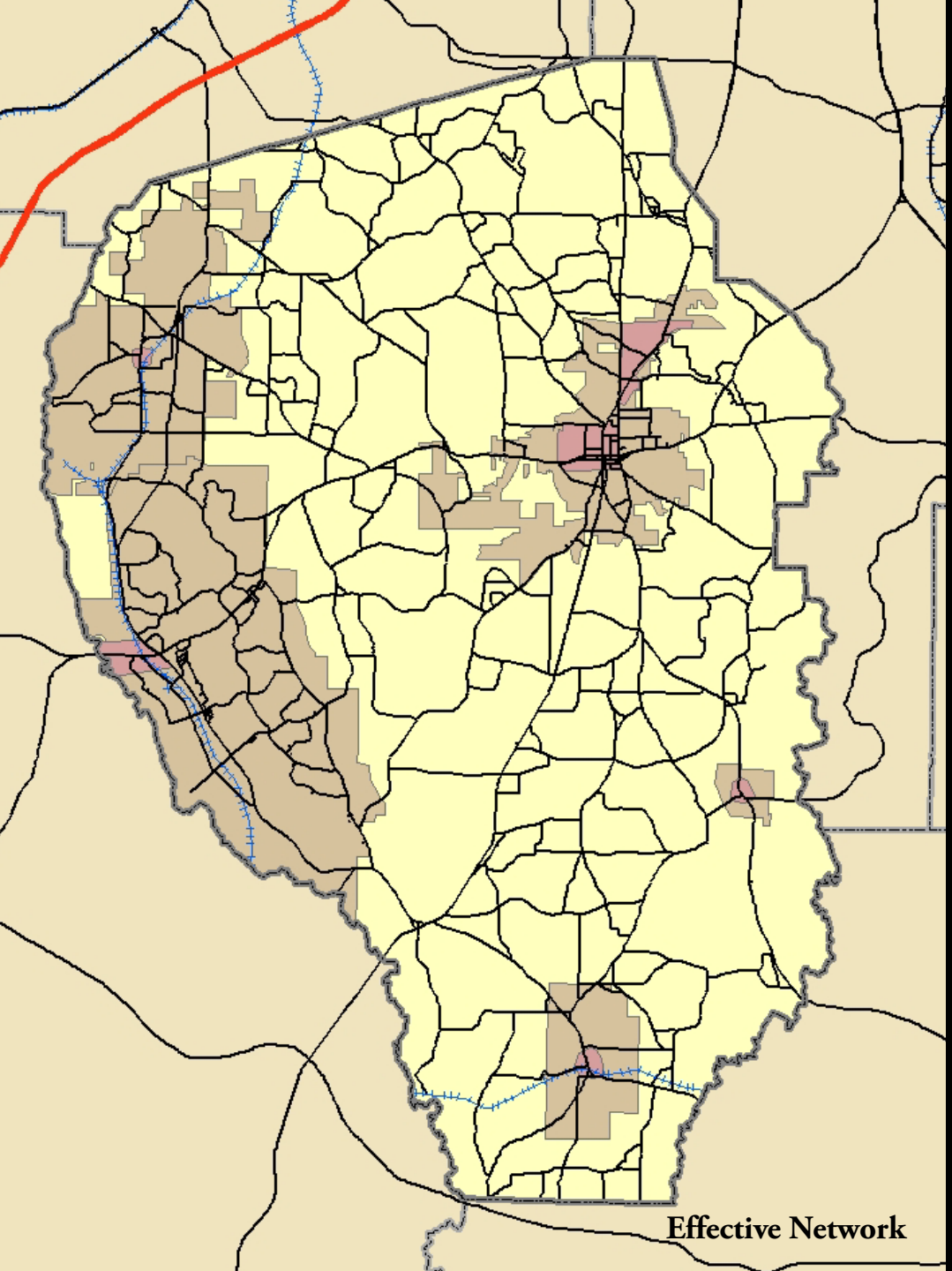
Roswell: Effective Network

44% of the Total Network is “Effective”

Fayette County



Fayette County

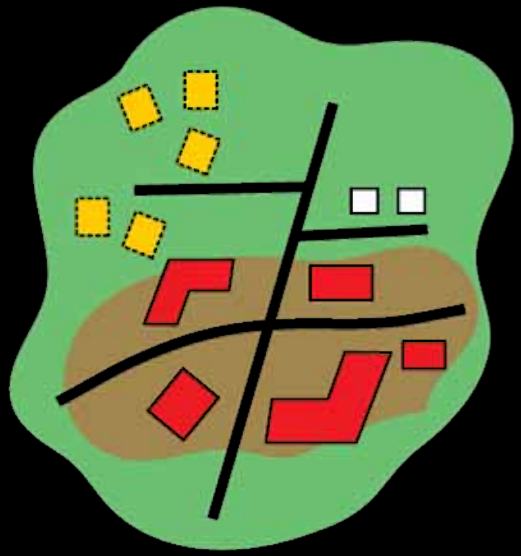


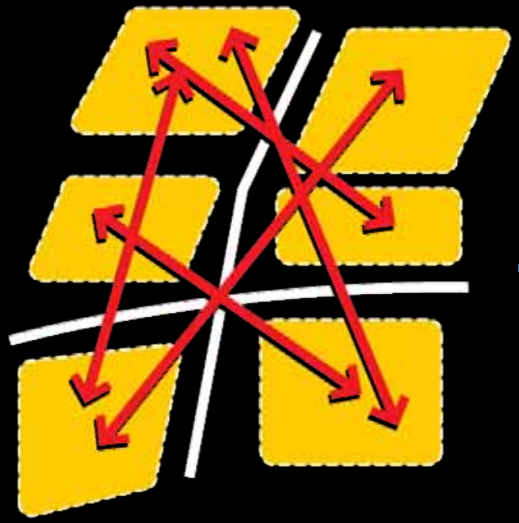
42% of the total network is effective

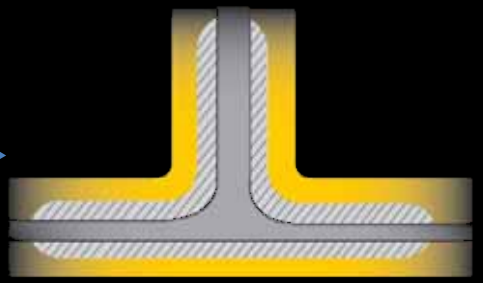
Land Use/Transportation

"The Concept"

Land Use → **generates** → **Travel** → **demands** → **Road Capacity**







Anticipate → **Forecast** → **Accommodate**

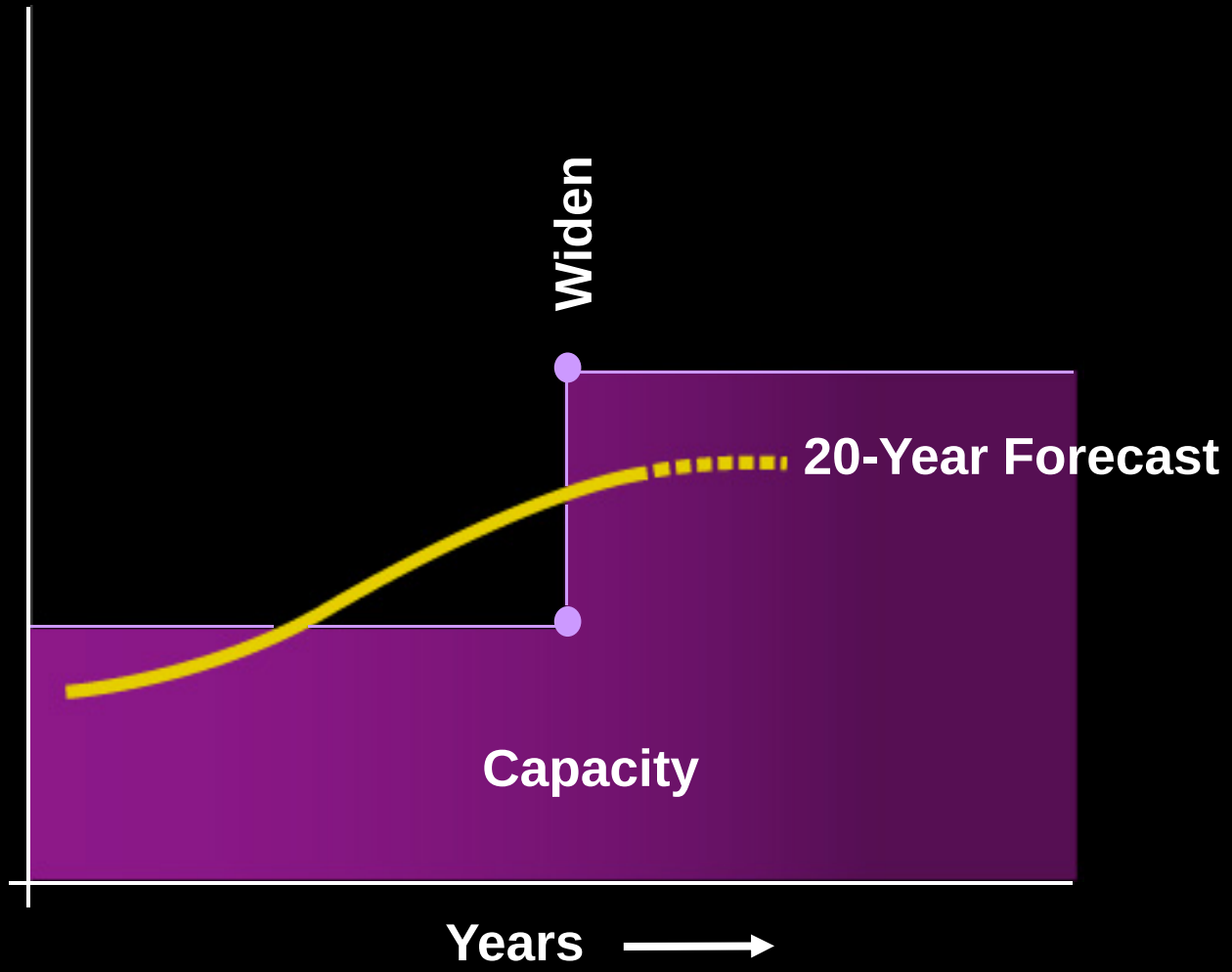
Johnson City, TN

Land Use Patterns are Dictated by Transportation Facility Design

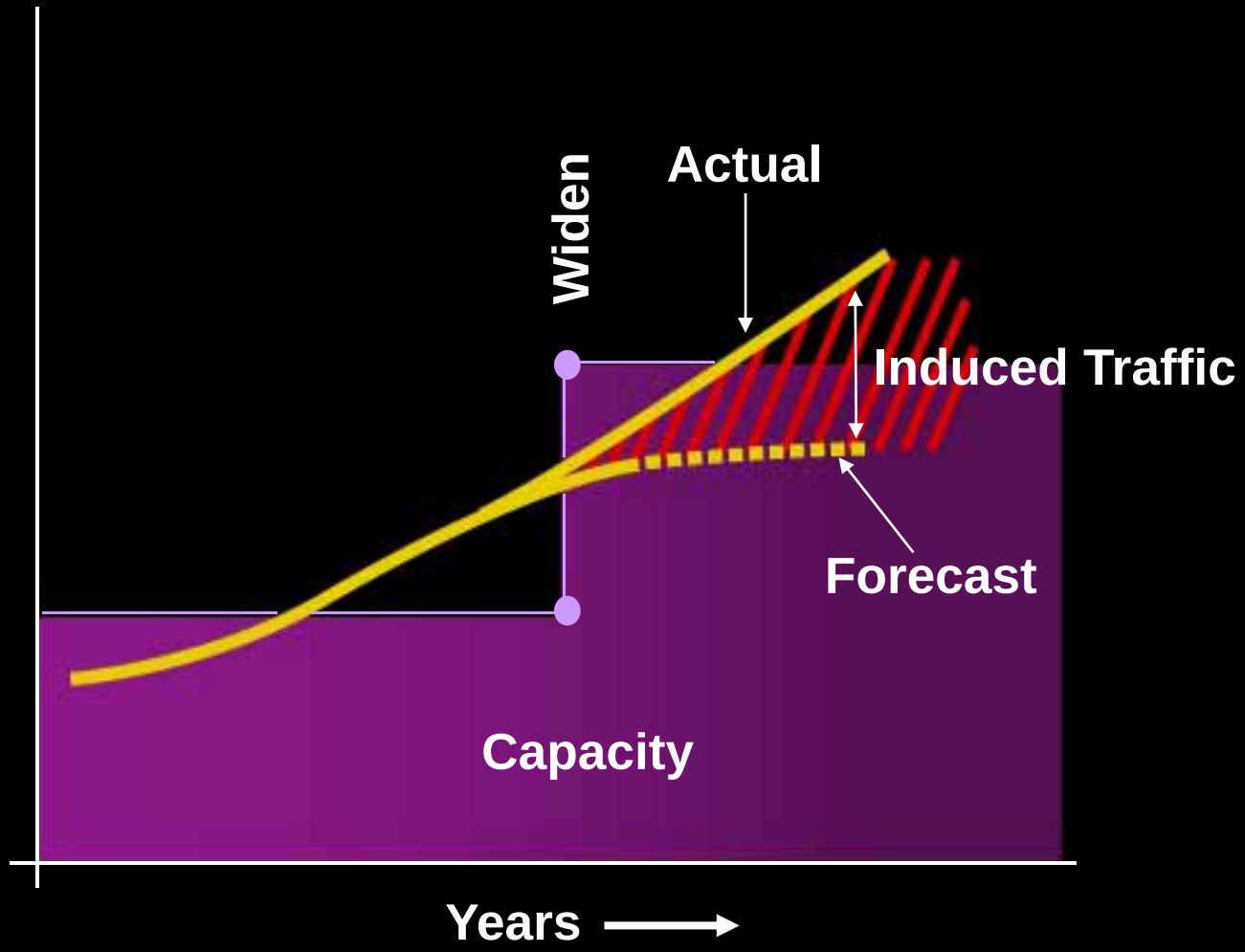
Johnson City, TN

Land Use Patterns are Dictated by Transportation Facility Design

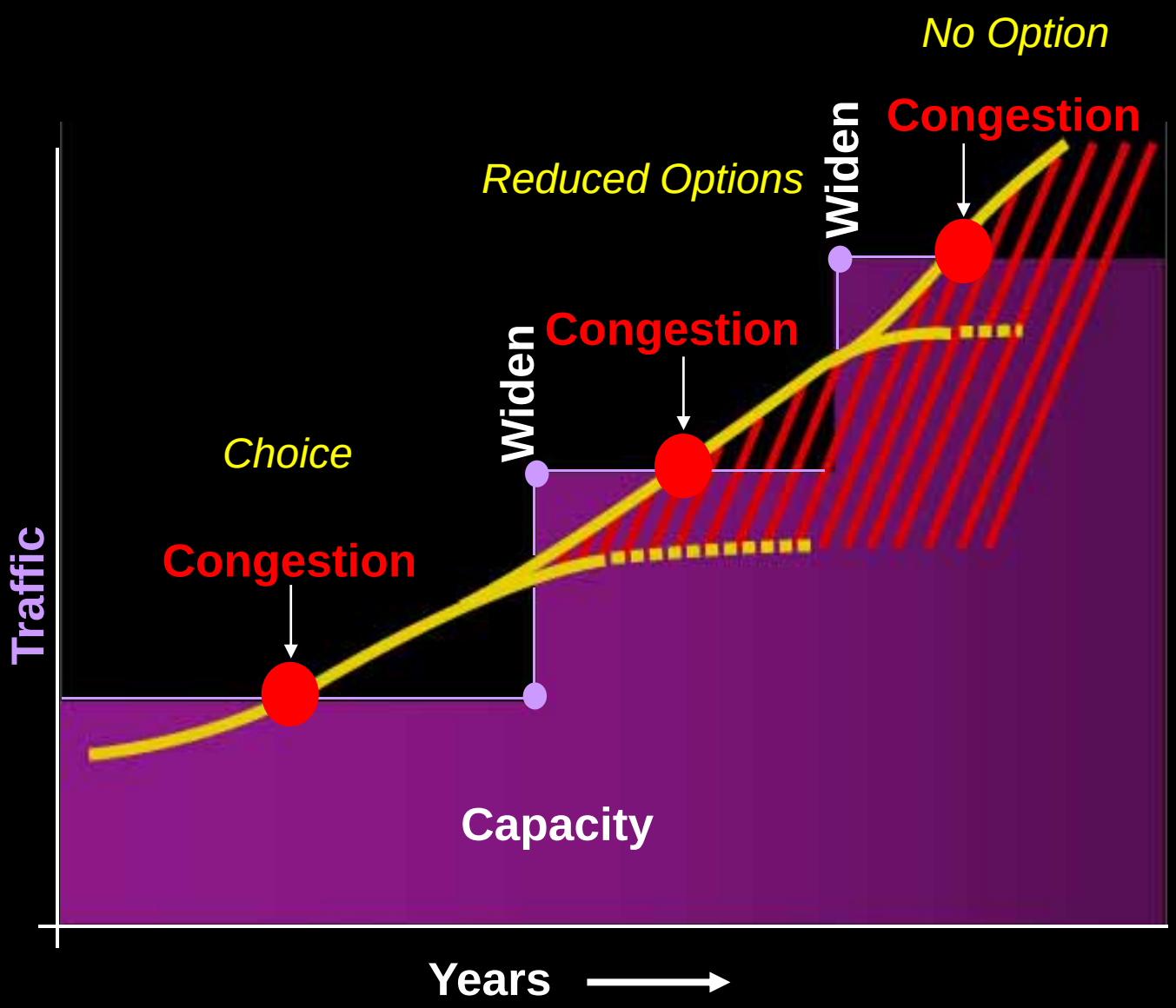
Land Use & Transportation – Ideal Traffic Planning



Land Use & Transportation – The Reality



Larger Roads Limit Transportation and Land Use Choices




Can't Be Improved Further
QUALITY USED CARS

How Do We Use The ARC Model?

Travel Demand Forecasting Approach

Use latest version of ARC travel demand model through 4 forecasting stages

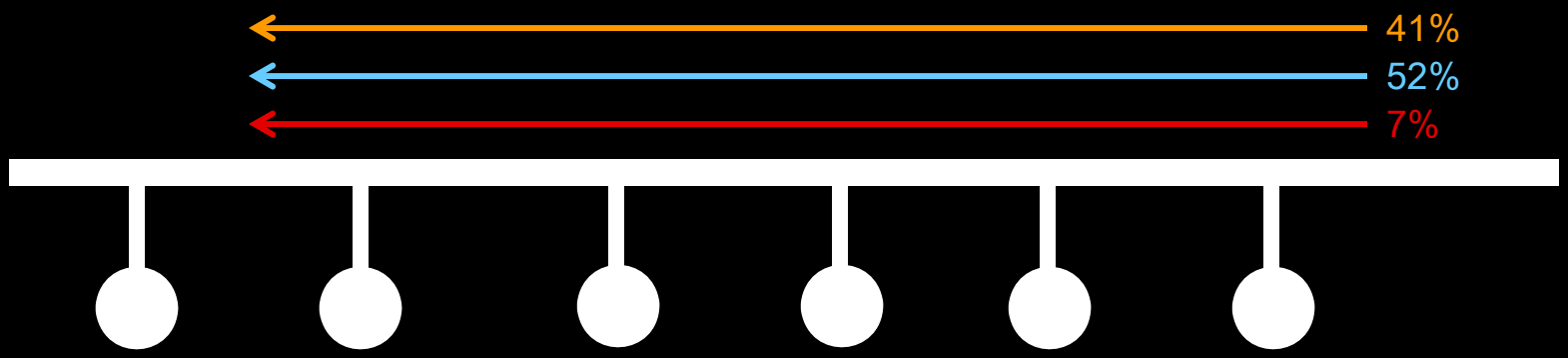
Stages	Adaptation & Validation	Existing Conditions & Needs Assessment	Evaluation of Improvements	Recommendations

	• Adapt to Fayette County conditions:
	  • Divide TAZ
	  • Update highway network
	  • Update external station representation
	• Validate model to existing conditions
		• If appropriate, adjust Fayette SE data
		• Run model for years 2010 and 2030
		• Process outputs to derive performance measures
			• Develop scenarios of improvement projects
			• Represent scenarios in model
			• Run the model for each scenario
			• Process outputs to derive performance measures
				• Screen improvement projects
				• Develop a package of recommended projects
				• Run the model for recommended package
				• Process outputs to derive performance measures
				  • Use official ARC SE data

Deliverables	• *Model adaptation and validation documentation*	• *Existing conditions and needs assessment performance measures* • *Contribution to Needs Assessment Report*	• *Evaluation performance measures* • *Contribution to Analysis Report*	• *Final recommendation performance measures* • *Contribution to Final Report* • *Complete modeling supporting documentation*

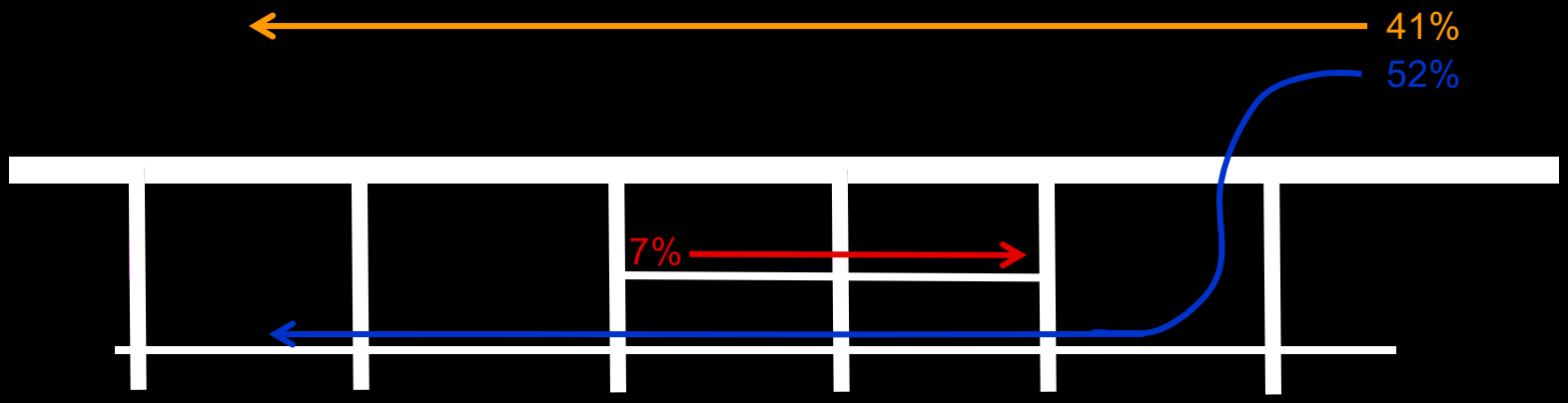
A Tool, Not The Answer

Trips Totally Within Study Area	7%
Trips That Start OR End in Study Area	52%
Trips Through Study Area	41%



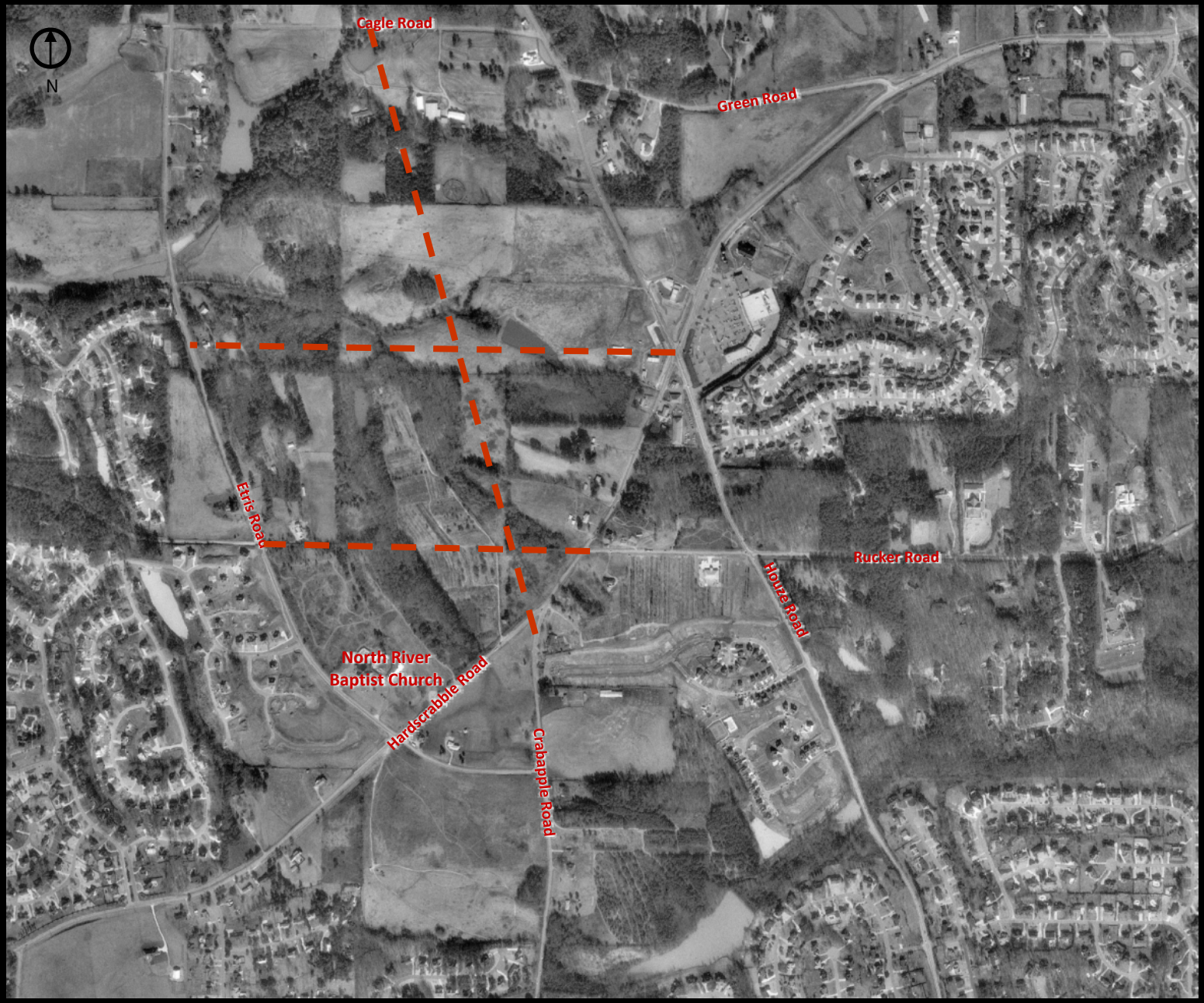
A Tool, Not The Answer

Trips Totally Within Study Area	7%
Trips That Start OR End in Study Area	52%
Trips Through Study Area	41%

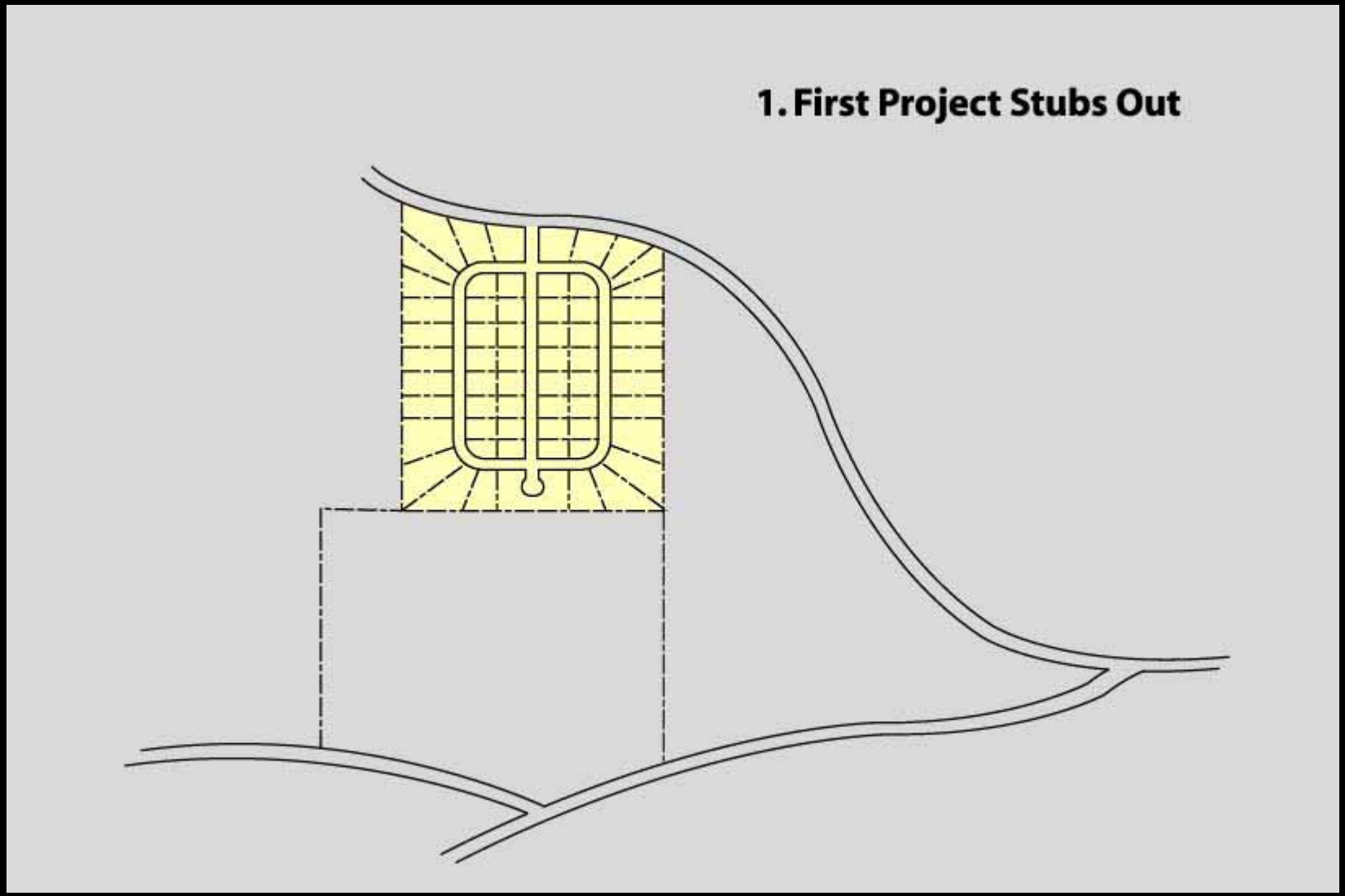


Etris Road & Hardscrabble Road
(1993)

Etris Road & Hardscrabble Road
(1993)

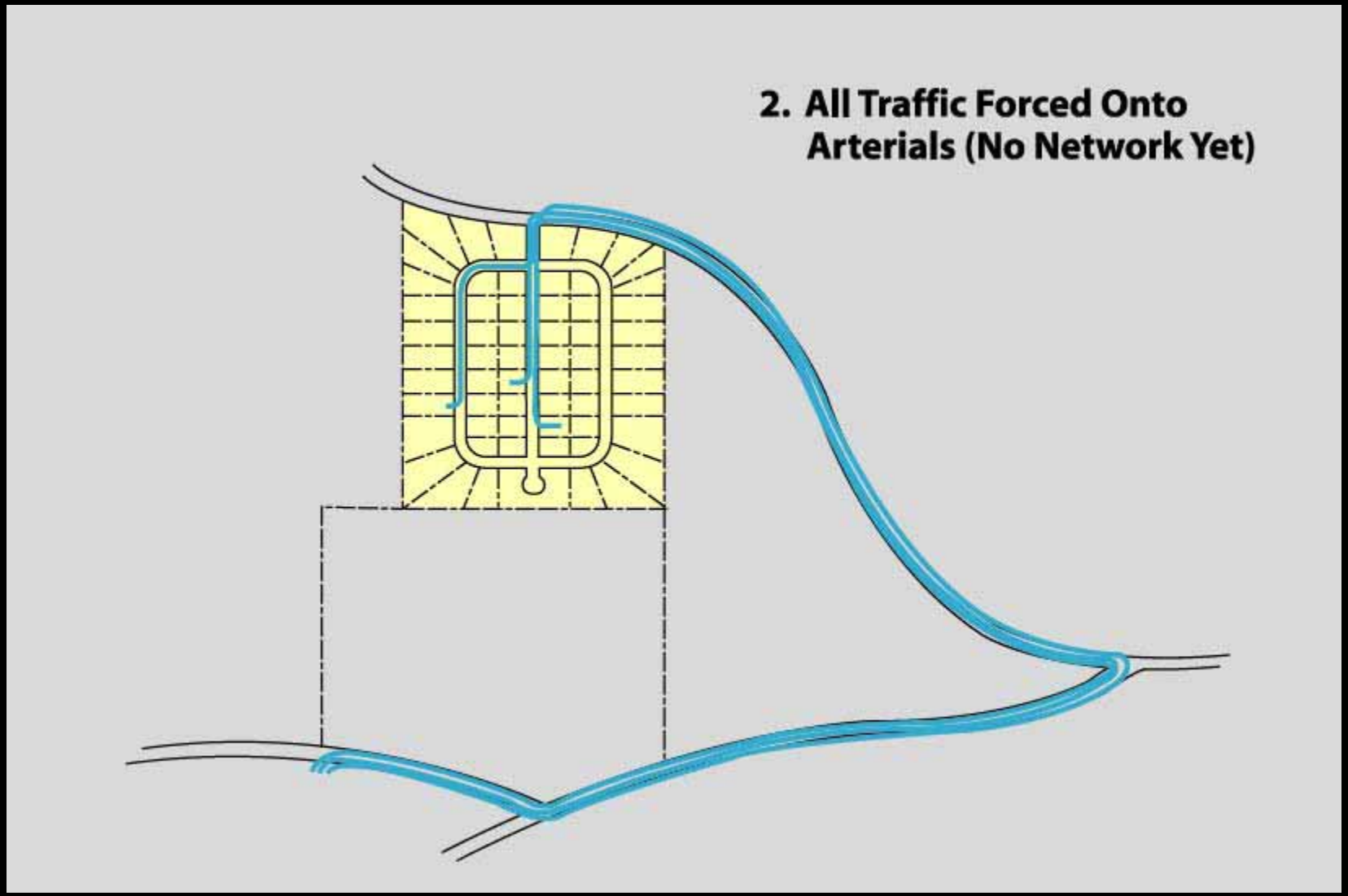


Etris Road & Hardscrabble Road
(2003)



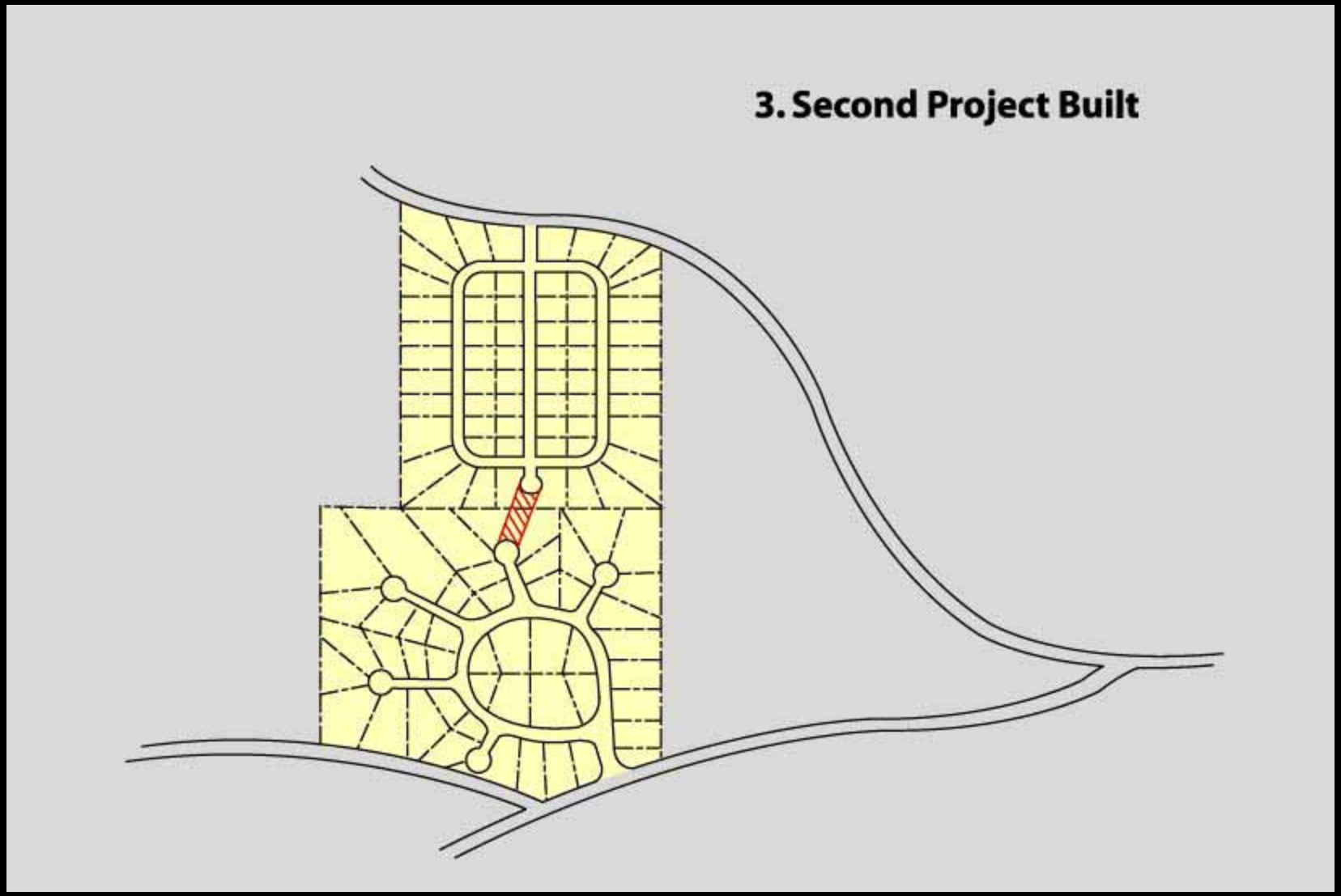
Strengthen and direct development towards existing communities

Create network and create capacity

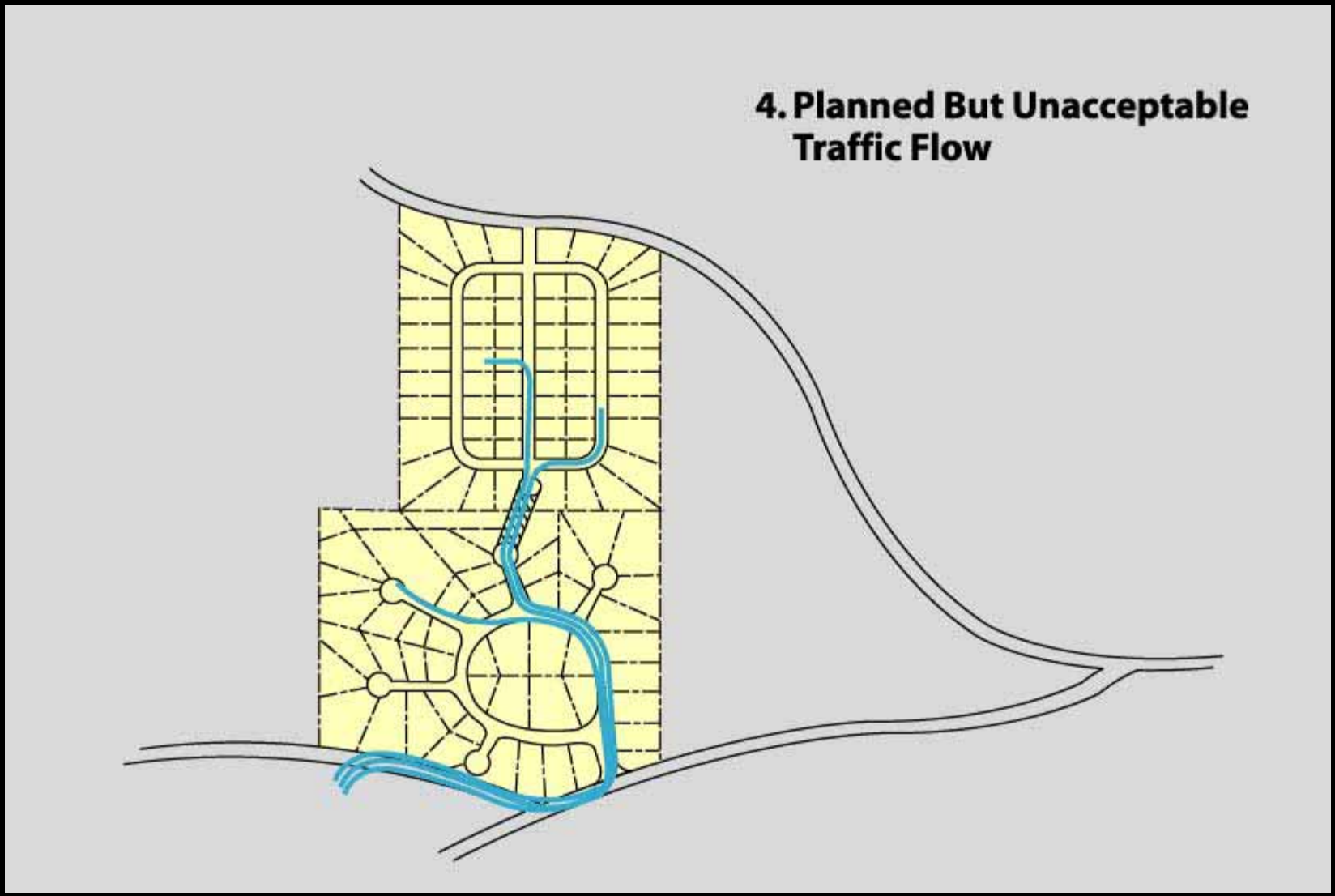


Strengthen and direct development towards existing communities

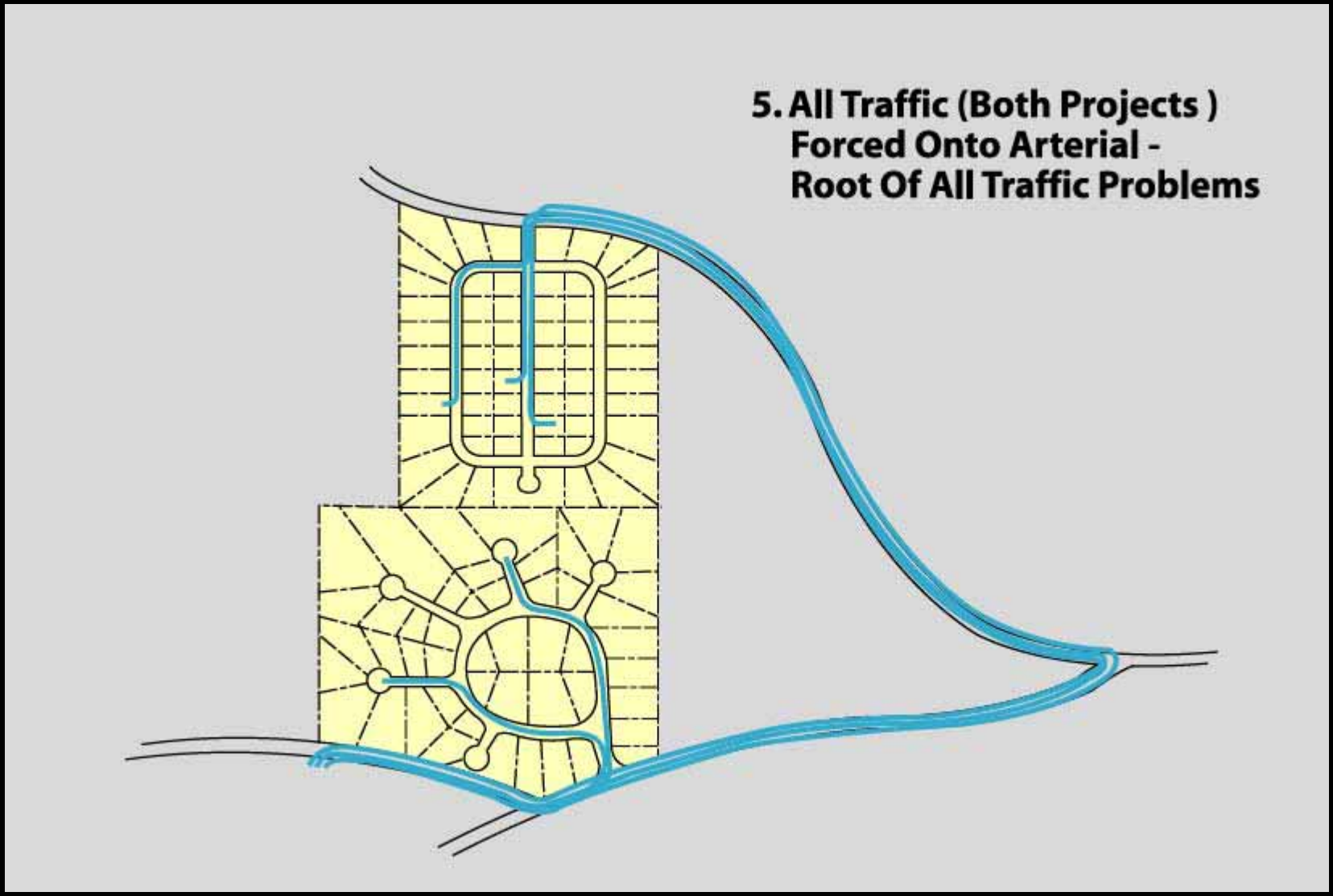
Create network and create capacity



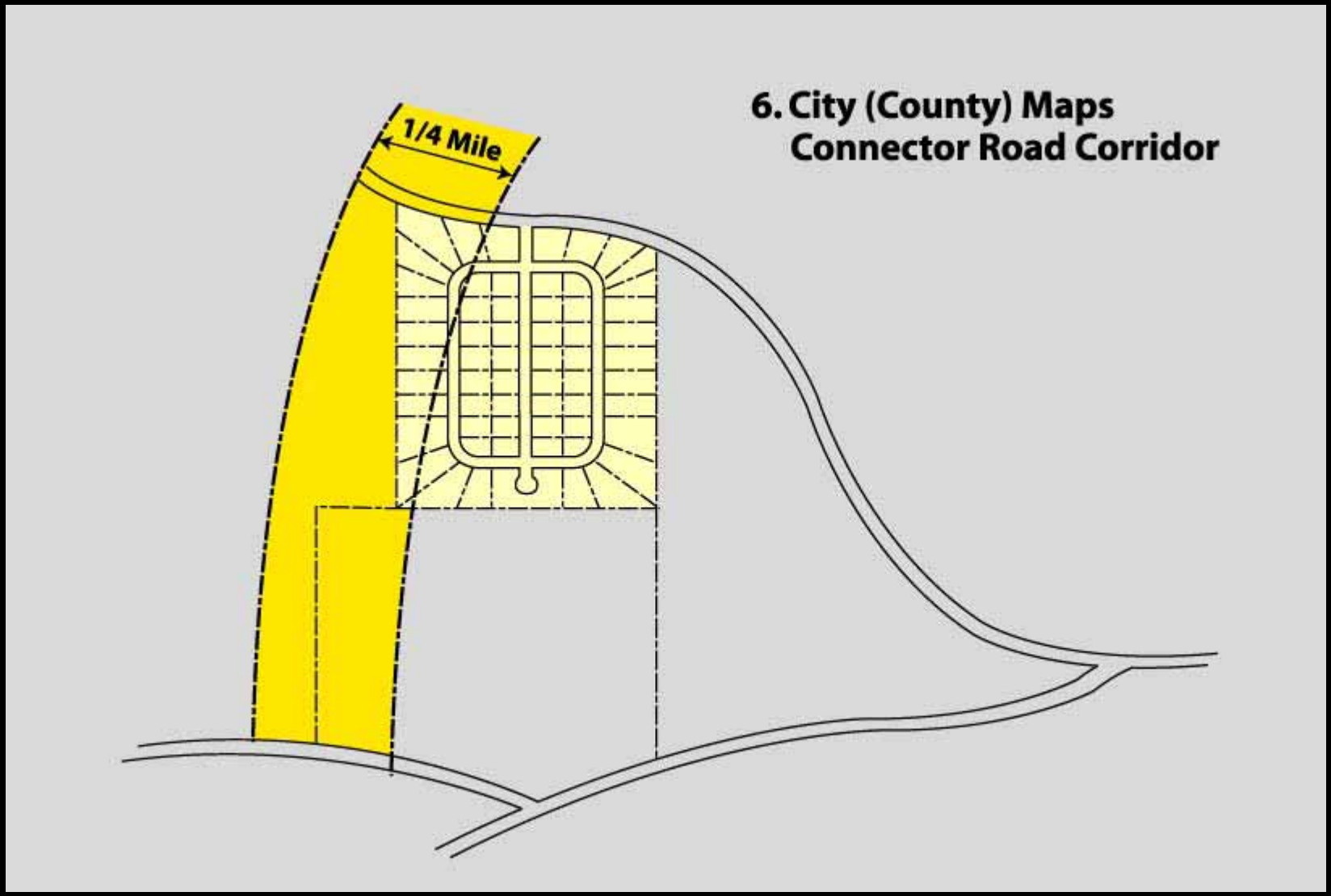
Strengthen and direct development towards existing communities



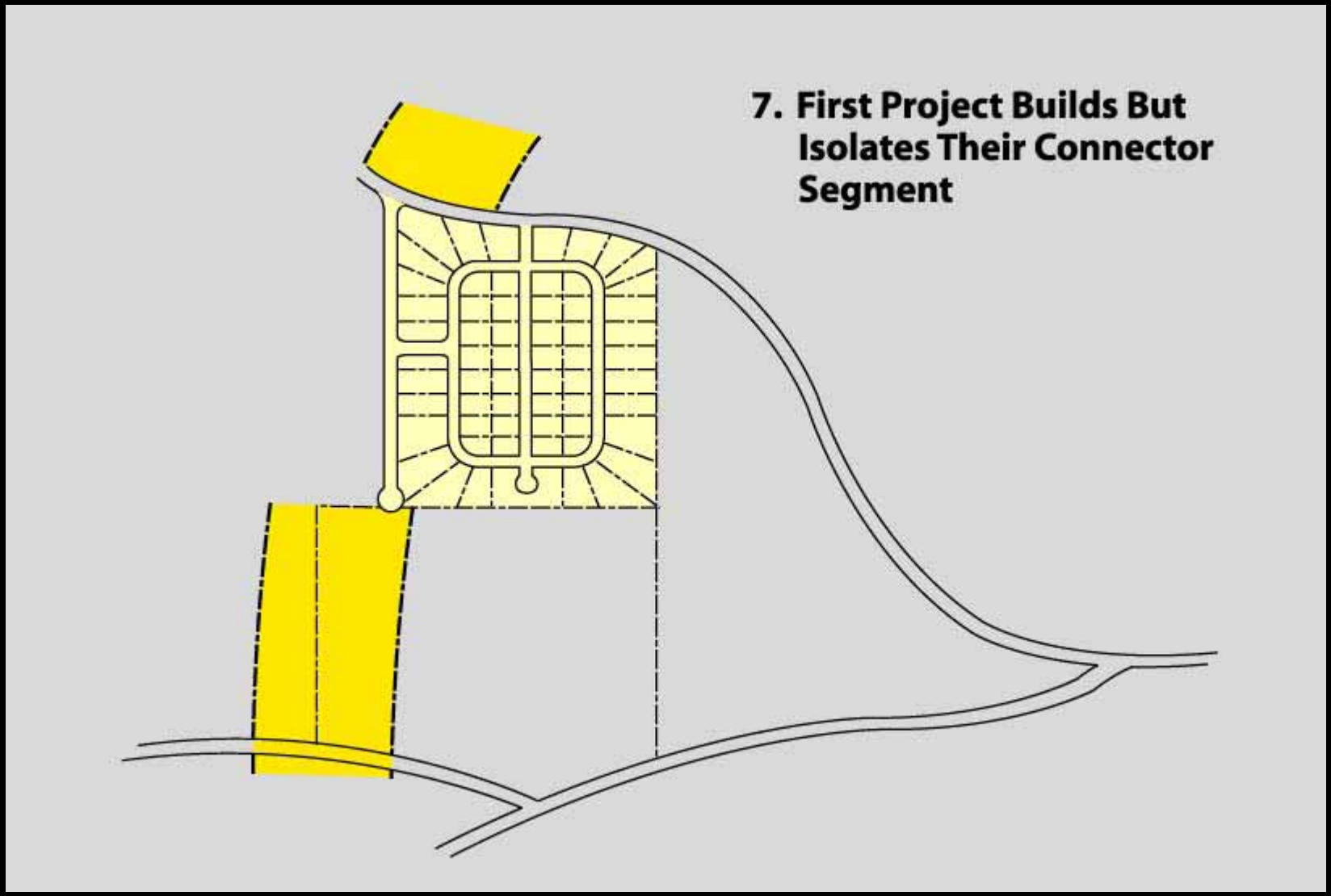
Strengthen and direct development towards existing communities



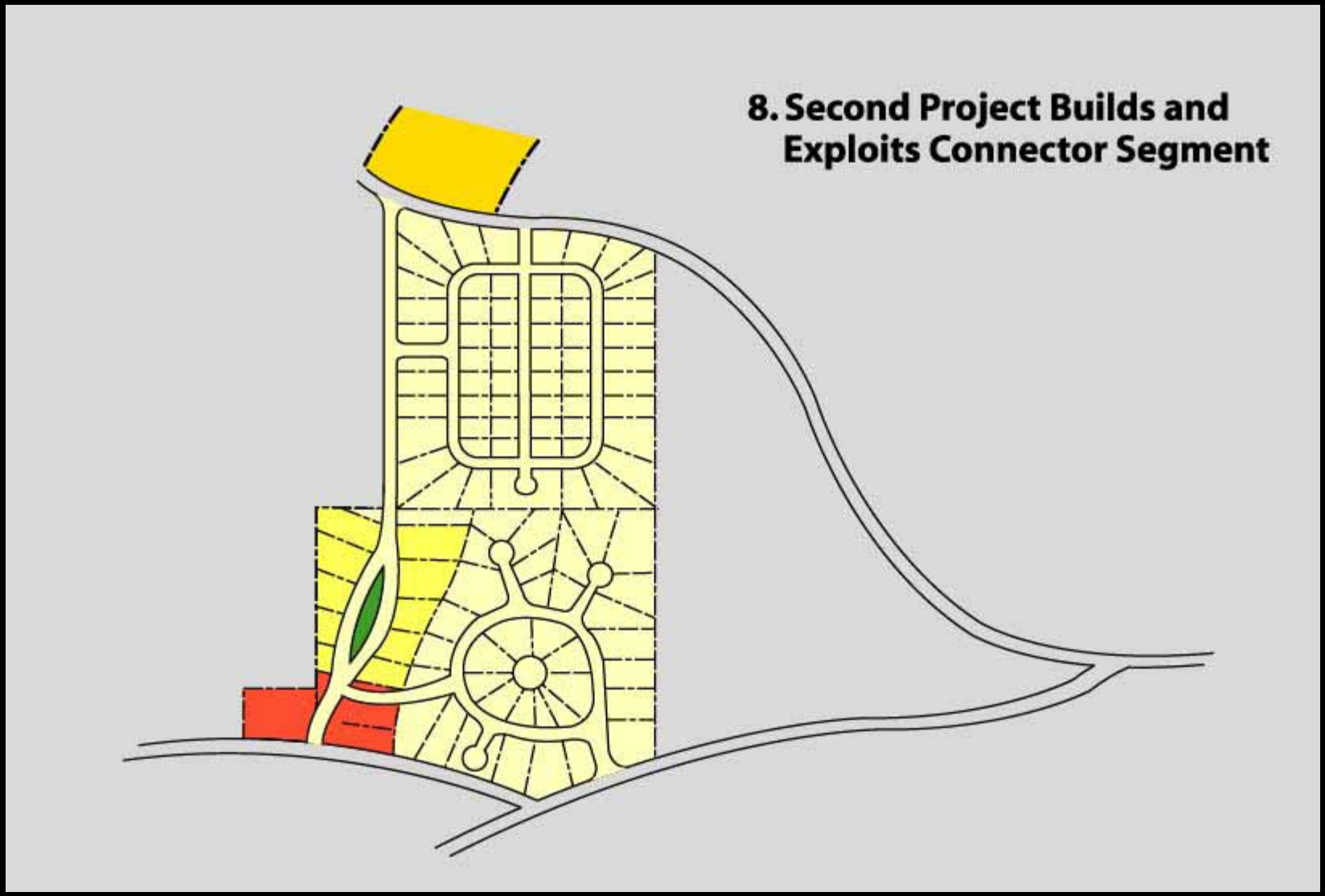
Strengthen and direct development towards existing communities



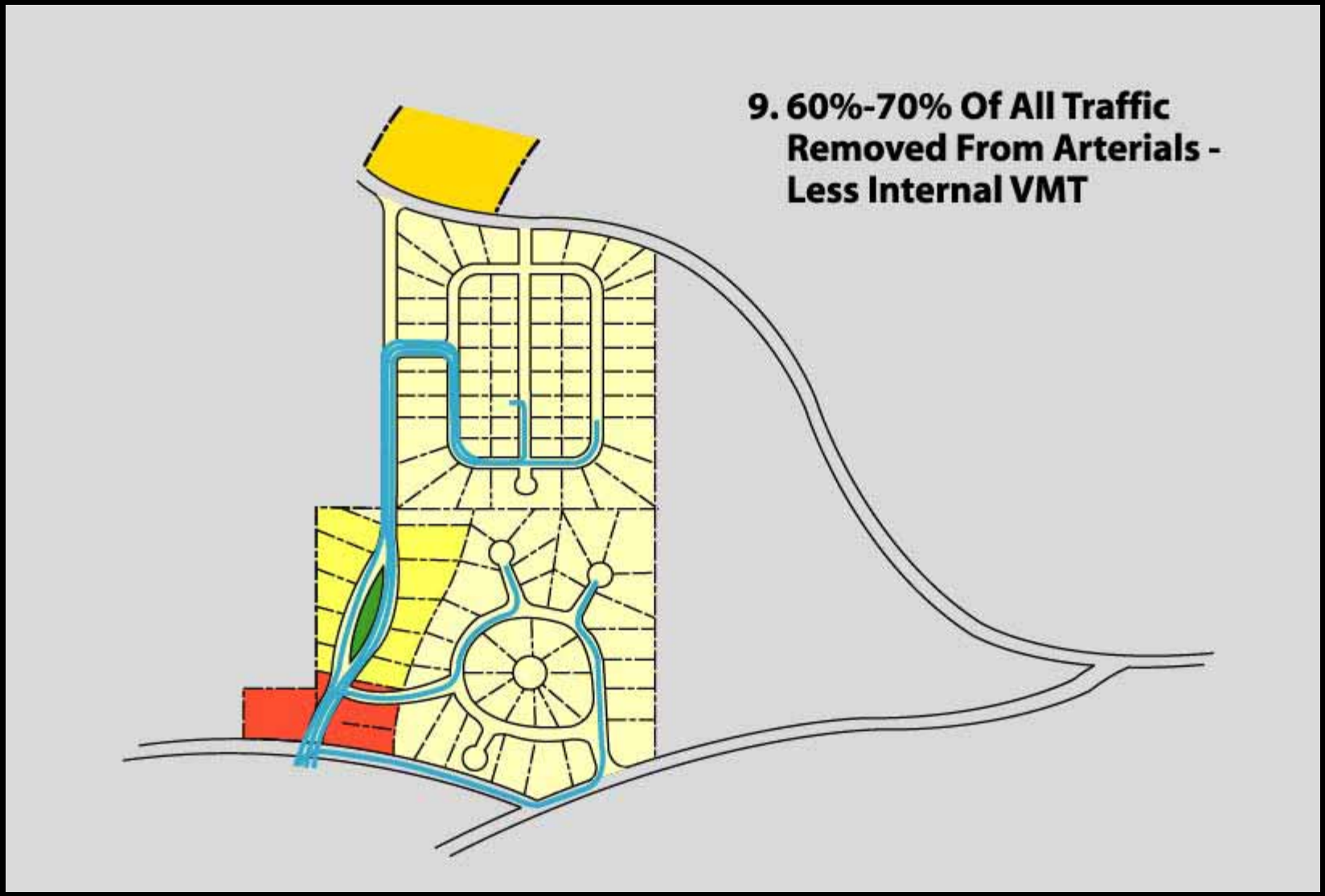
Strengthen and direct development towards existing communities



Strengthen and direct development towards existing communities

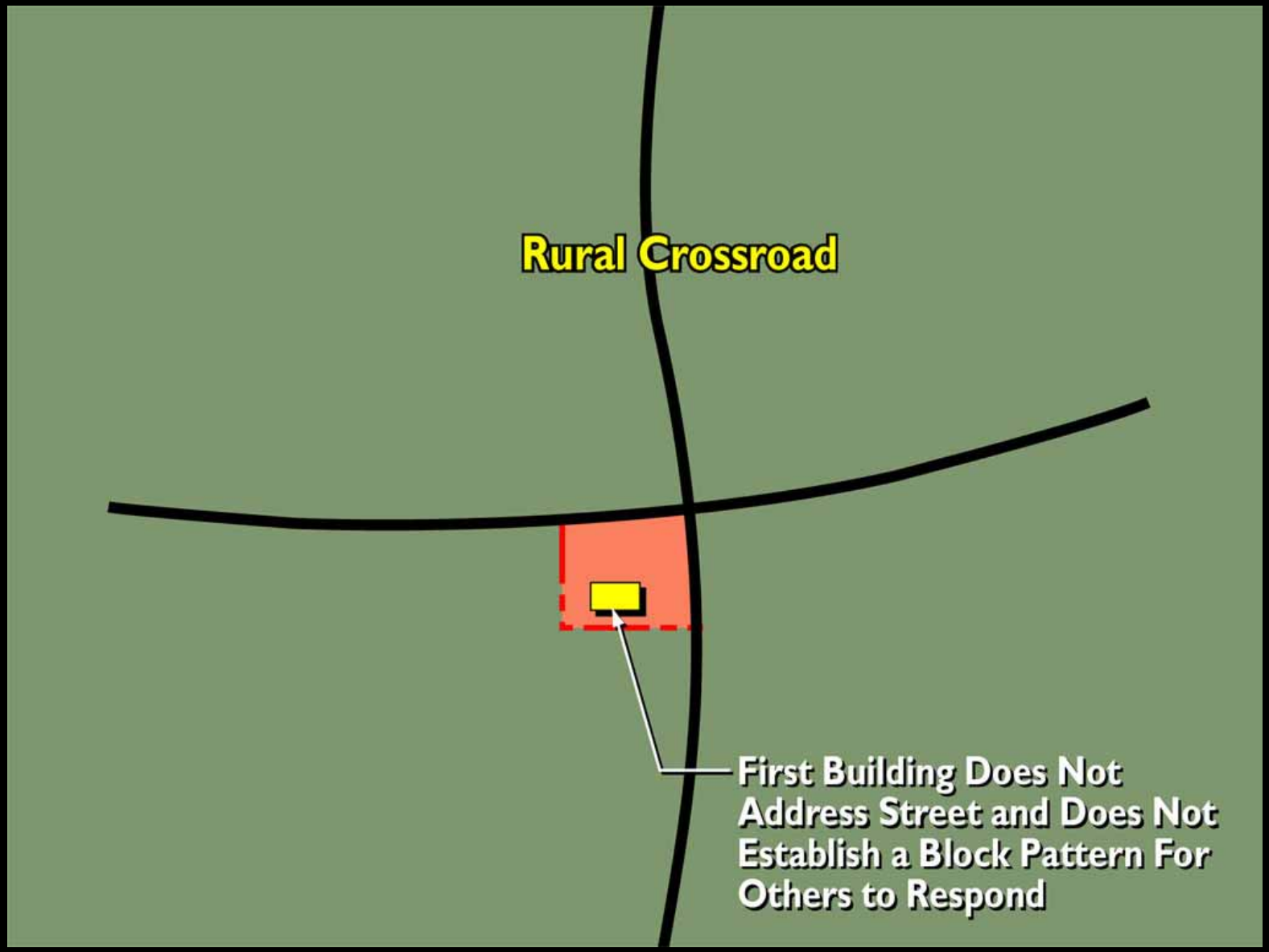


Strengthen and direct development towards existing communities



Strengthen and direct development towards existing communities

Lack of street network strings out development

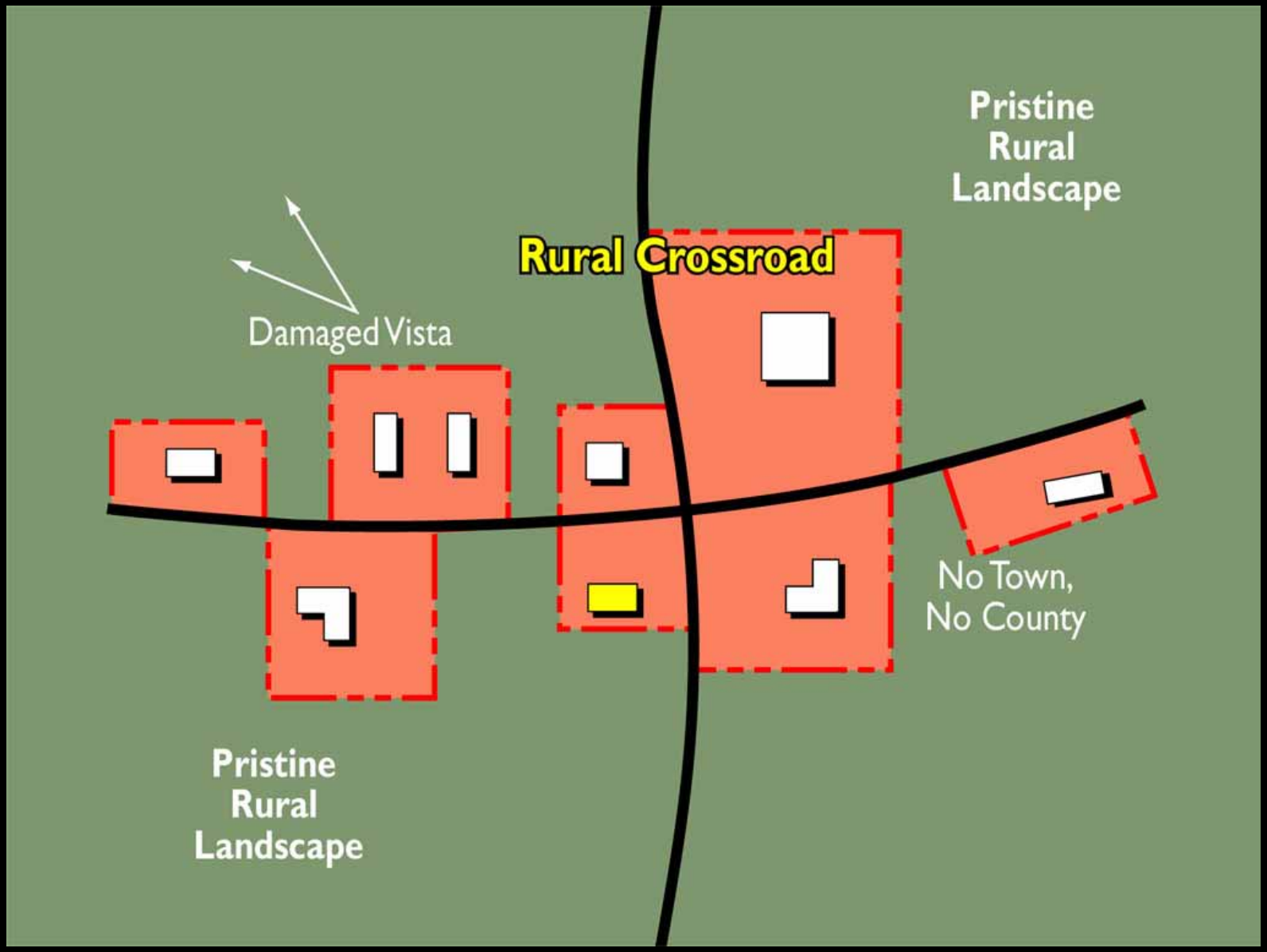


Preserve open space and farmland

Street network creates a rural place

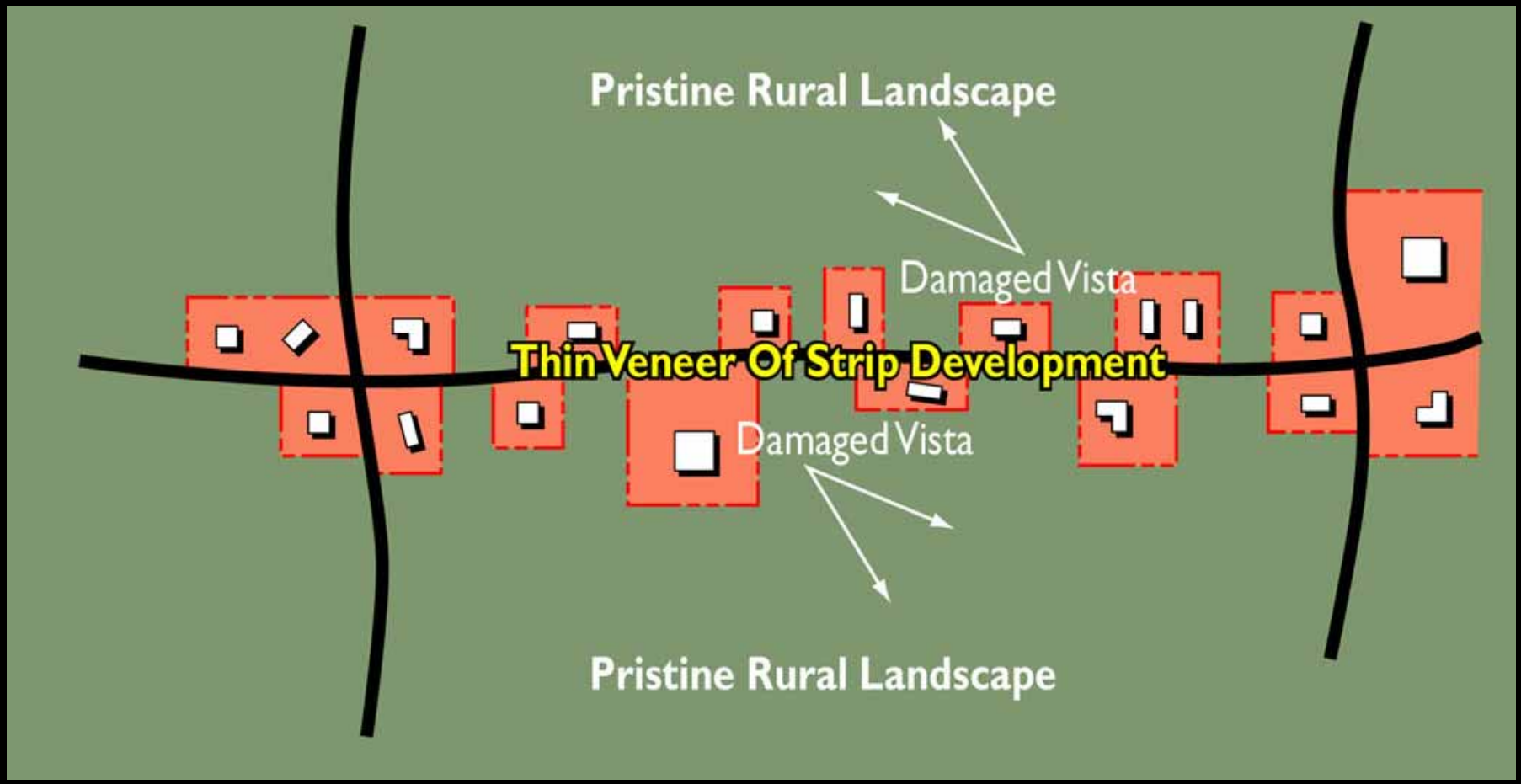
Preserve open space and farmland

Lack of street network strings out development



Preserve open space and farmland

Lack of street network strings out development

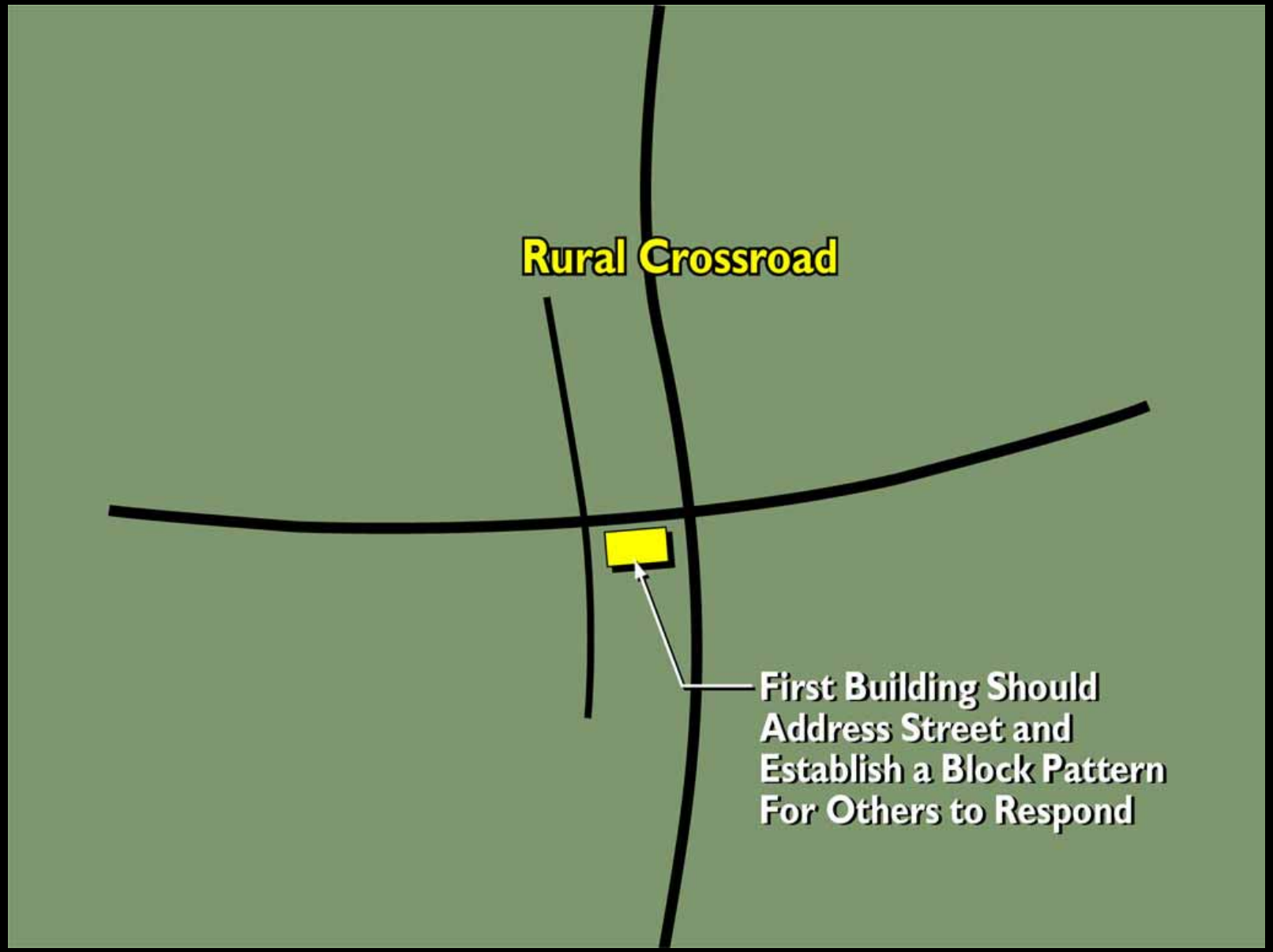


"The county should attempt to discourage additional commercial development along major roadways."

Fayette County Comprehensive Plan

Preserve open space and farmland

Street network creates a rural place

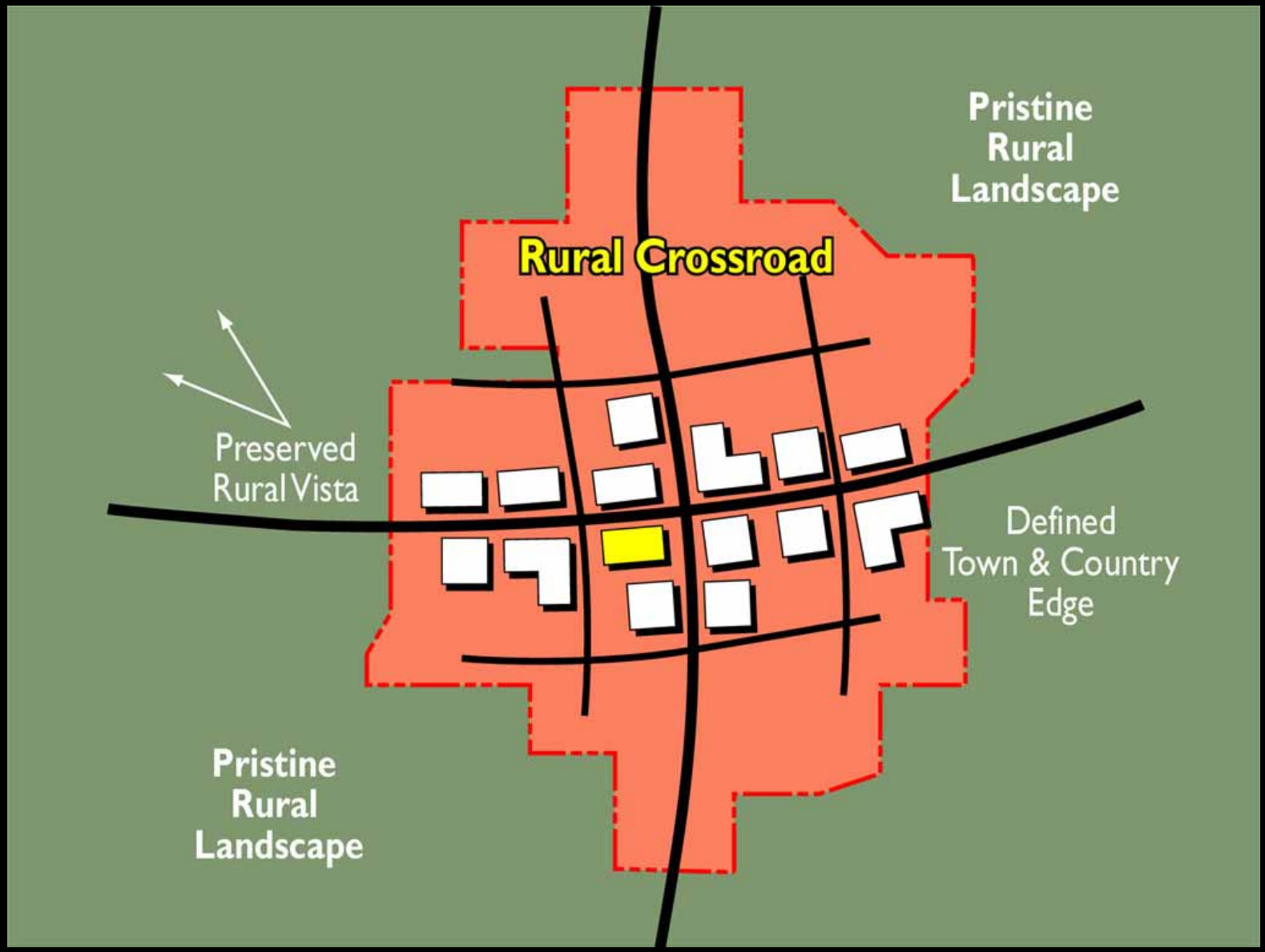


Preserve open space and farmland

Street network creates a rural place

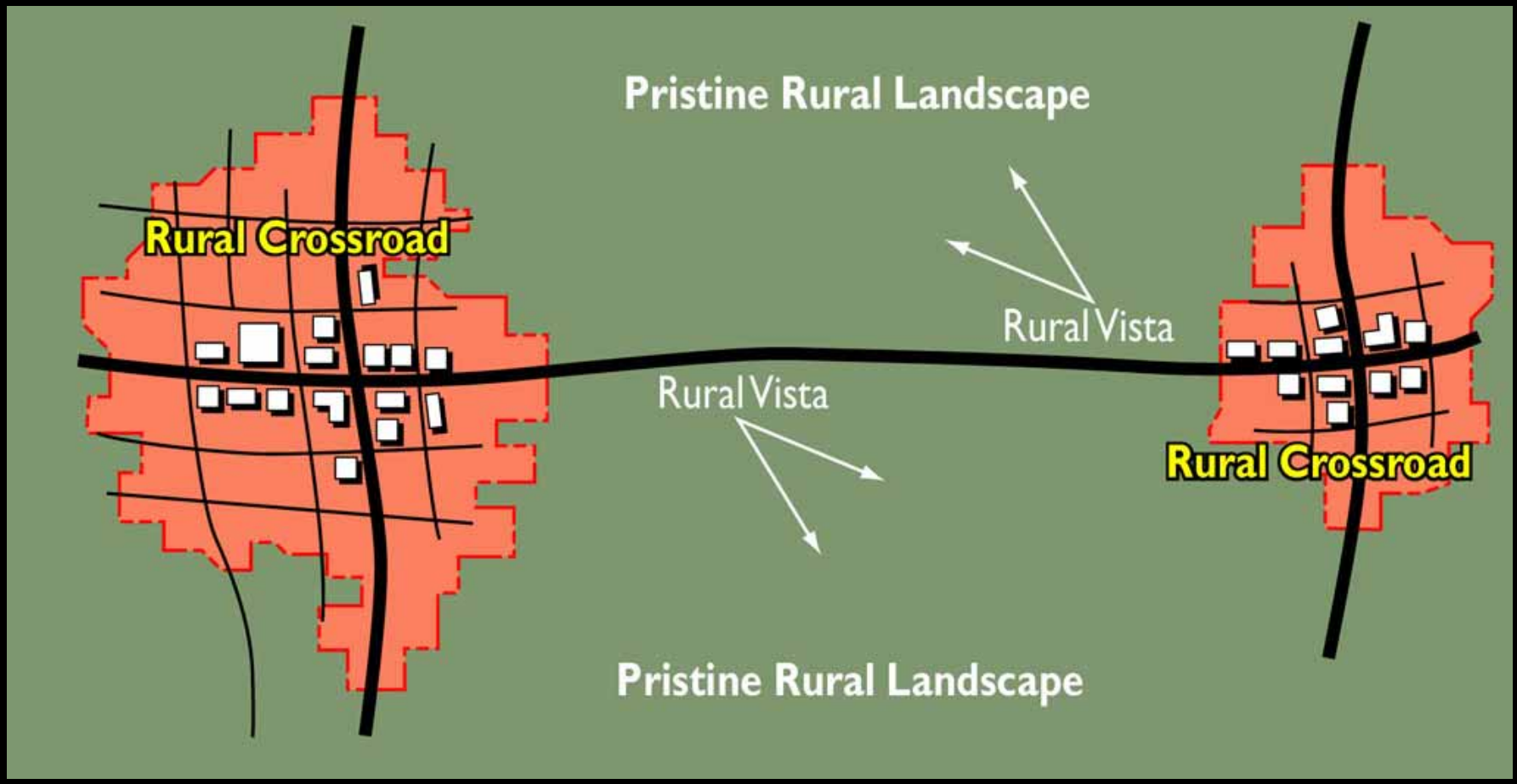
Preserve open space and farmland

Development drawn to rural crossroads



Preserve open space and farmland

Rural development in defined places preserves vistas



"Identify the location of nodes to accommodate nonresidential development and prevent the sprawl of strip development."

Fayette County Comprehensive Plan

Preserve open space and farmland

Technical Discussion #2

How Do We Develop Other Travel Modes?

SMARTRAQ

Walkable Neighborhoods:

- People **drive less**
- More trips by **walking, biking or transit**
- Linked to **cleaner air**
- Linked to **lower obesity levels**

Source: A Summary of SMARTRAQ Findings, Larry Frank, David Goldberg, et. al.

Transit’s Role?

Transportation System Analyses

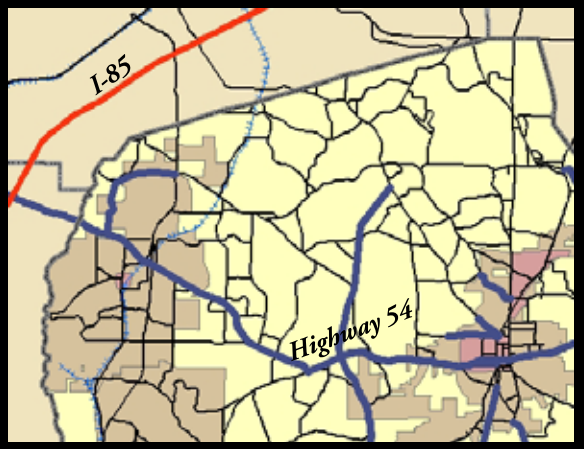
Streets
Capacity
Safety
Maintenance
Transportation Systems

Trails
Bike/Pedestrian Mobility
Connect to Peachtree City Paths

Freight
Goods Movement

Private Redevelopment
Connectivity

Transit
Commuter Rail
Express Buses

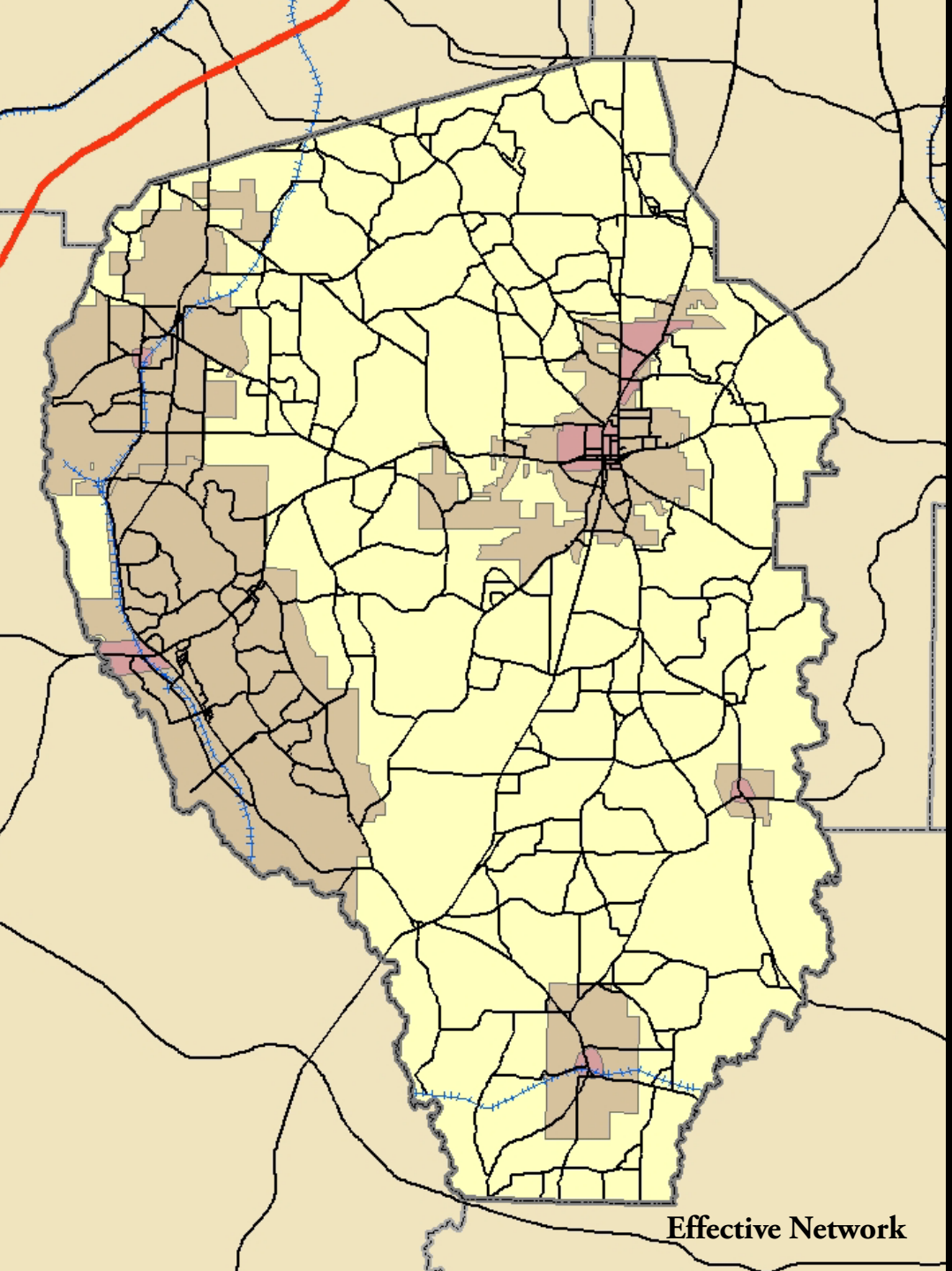


Technical Discussion #3

How Do We Make the County's Land Use Vision Real?

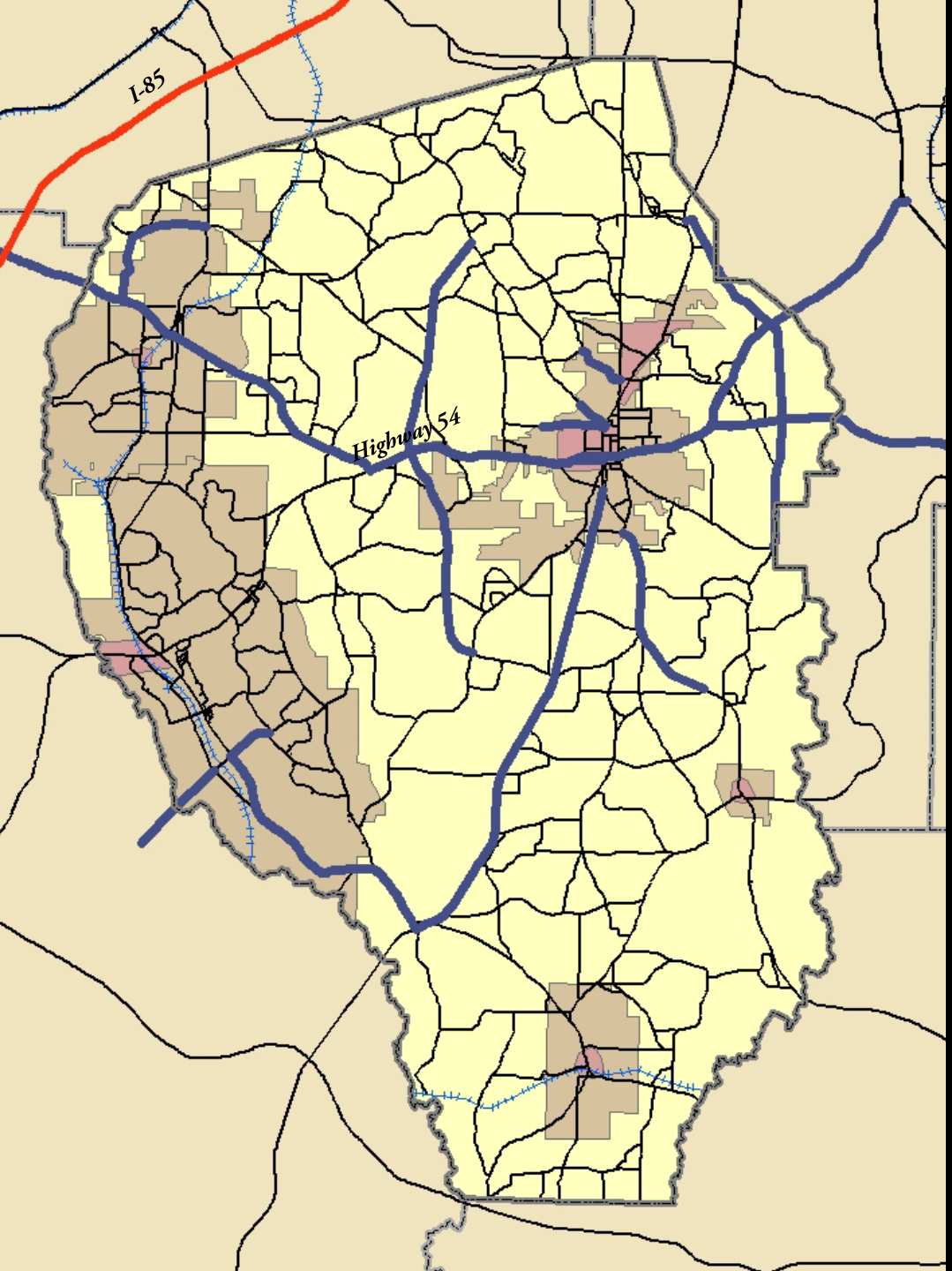
“The county should attempt to discourage additional commercial development along major roadways, as strip commercial development is neither desirable from a safety standpoint nor attractive.”

Fayette County



Only 42% of the network is effective

Fayette County

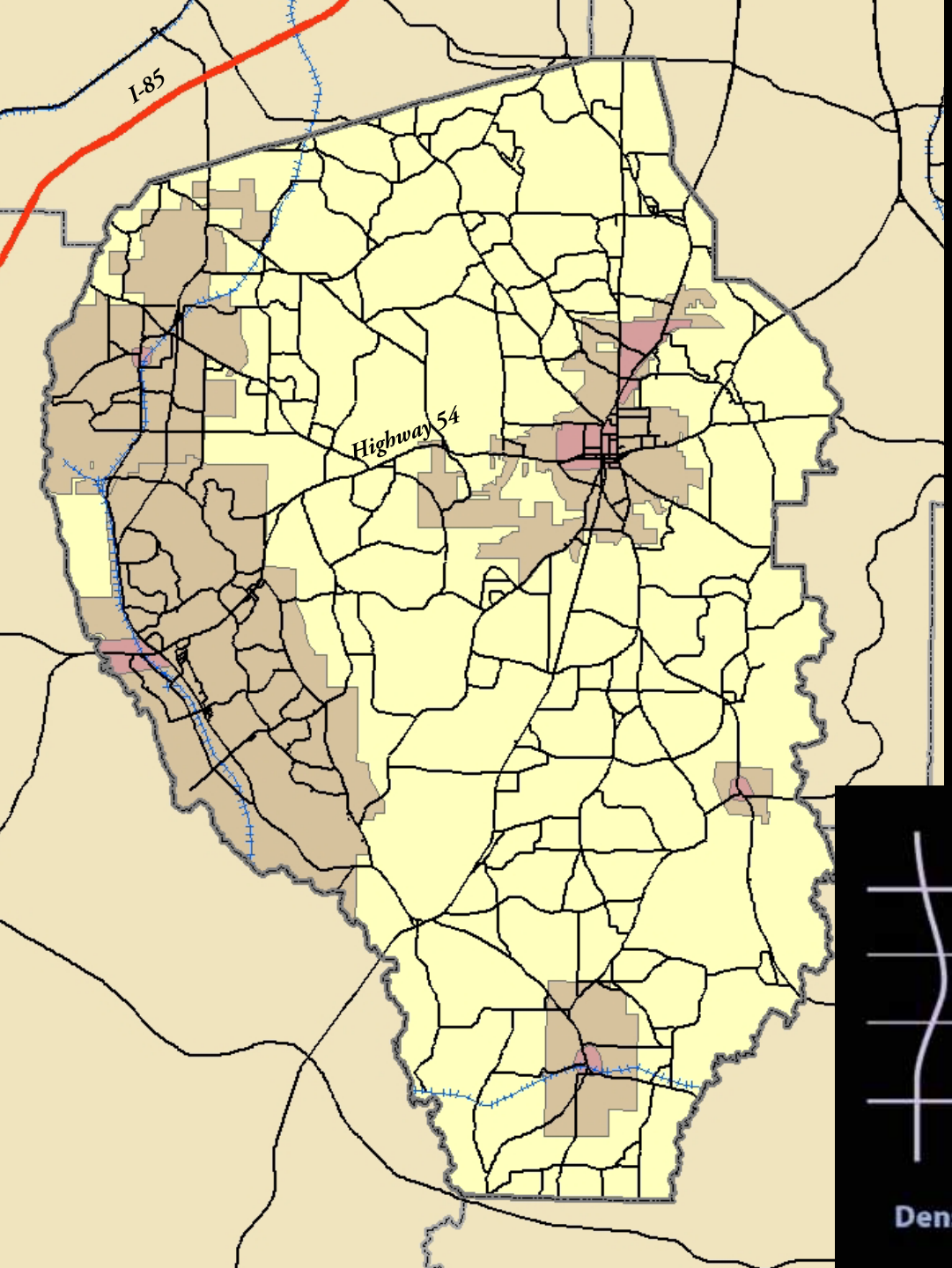


- All of the proposed Regional Transportation Projects are located on these effective roads

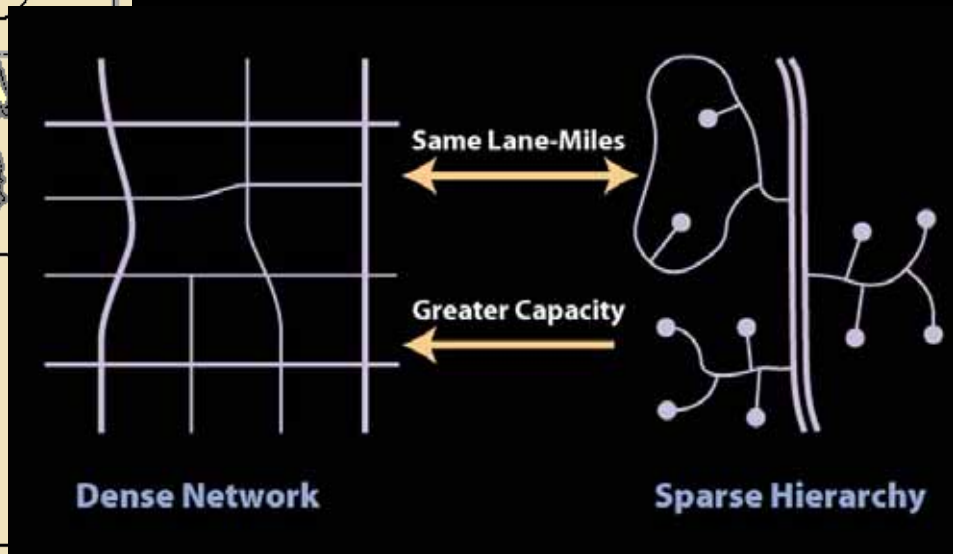
“Protect and enhance existing neighborhoods by ensuring that infill development is of compatible use, density/intensity, and that adverse impacts on public facility and transportation systems, the environment, and the surrounding area will not occur.”

“Minimize the potential adverse impacts of the development of frontage parcels on major arterials through the control of land use, circulation and access.”

Fayette County



- Since 2006 there have been 45 approved subdivisions, of which only 9 have had two entry points contributing to the lack of an effective network



The Interstate Conundrum

“…preserve rural character while allowing for reasonable and compatible growth…”

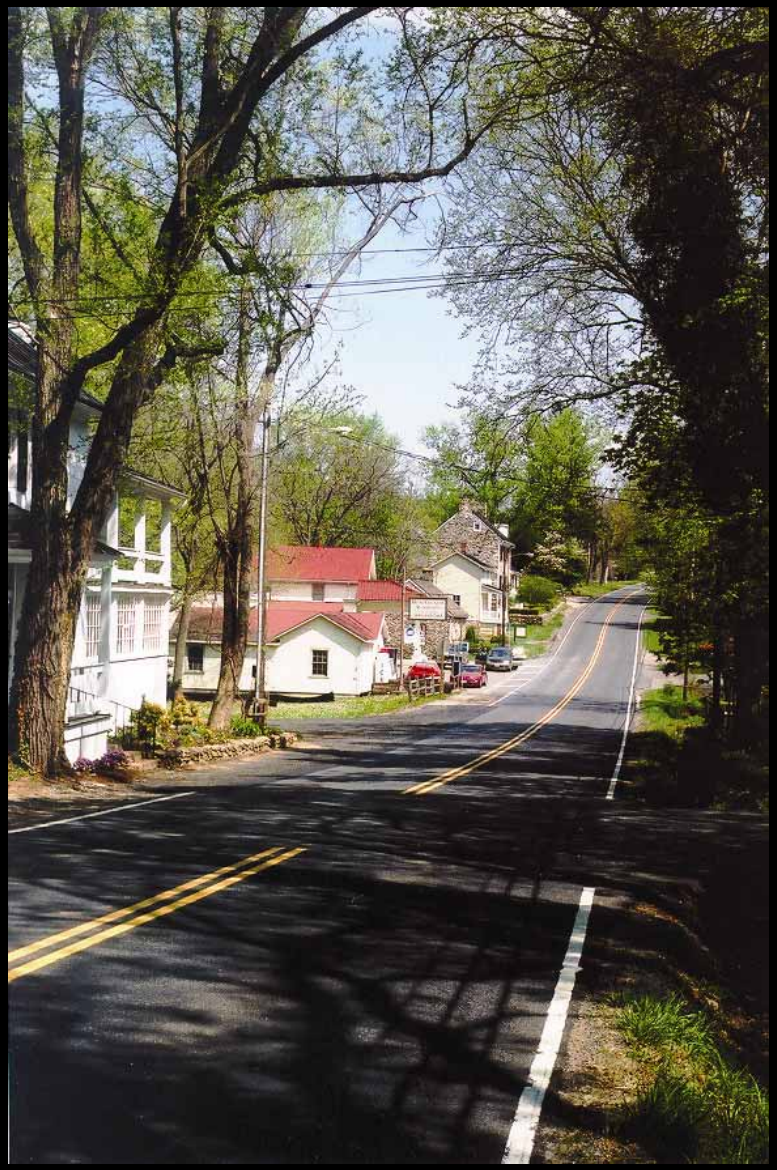
Virginia Route 50

- Preserve the rural and historical character of the roadway and surroundings
- Enhance motorist and pedestrian safety

The Context - Centers

Aldie

Middleburg



Upperville

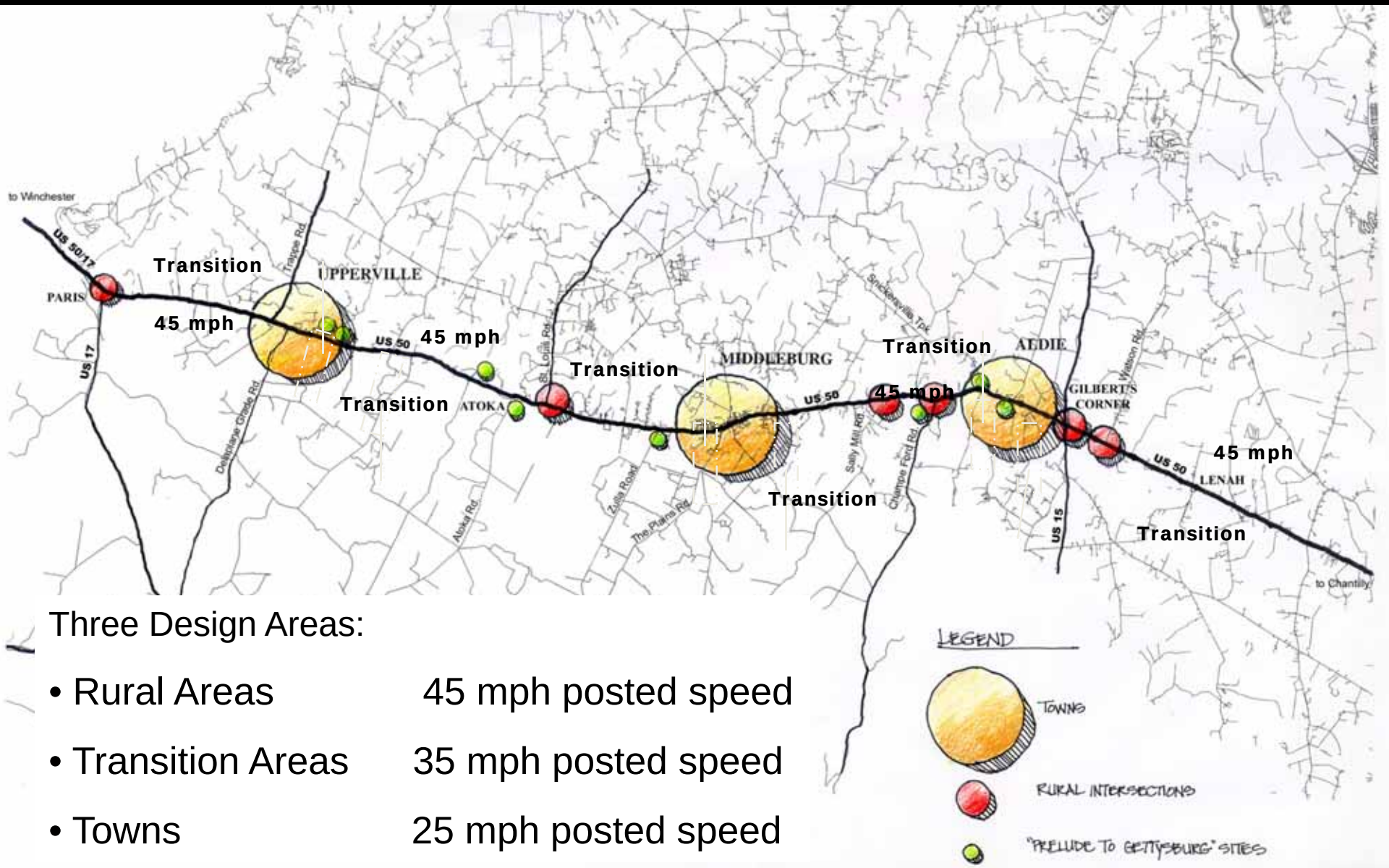
The Context - Corridors

Historic Sites

Farms

Equestrian Facilities

Design



Three Design Areas:

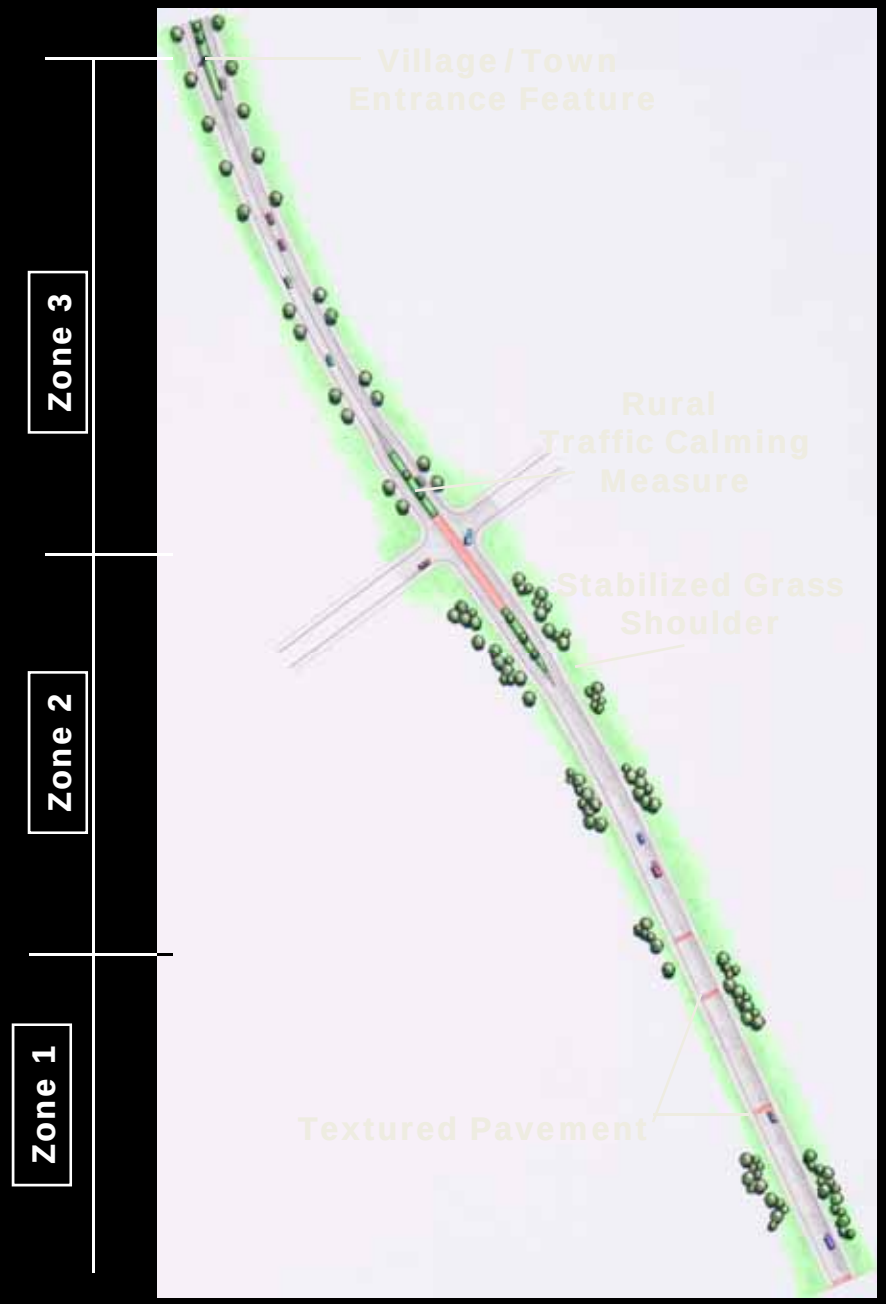
- Rural Areas 45 mph posted speed
- Transition Areas 35 mph posted speed
- Towns 25 mph posted speed

Transition Areas

Zone 1: Reduce Speeds
- 12’ travel lanes
- Textured pavement
- Rural landscaping treatment

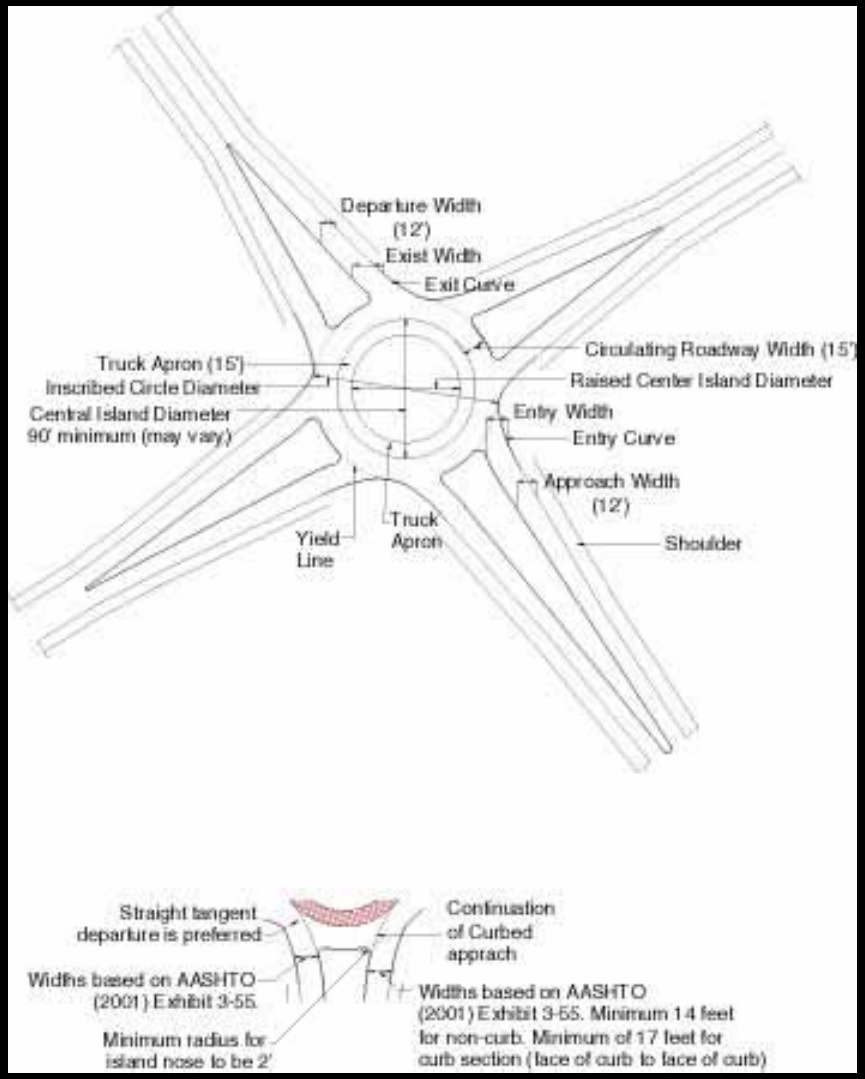
Zone 2: Announce Town
- 11’ travel lanes
- 1’ paver at edge of travel lane
- Rural landscaping treatment

Zone 3: Enter Town
- 10’ travel lanes
- 2’ paver at edge of travel lane
- More structured landscaping



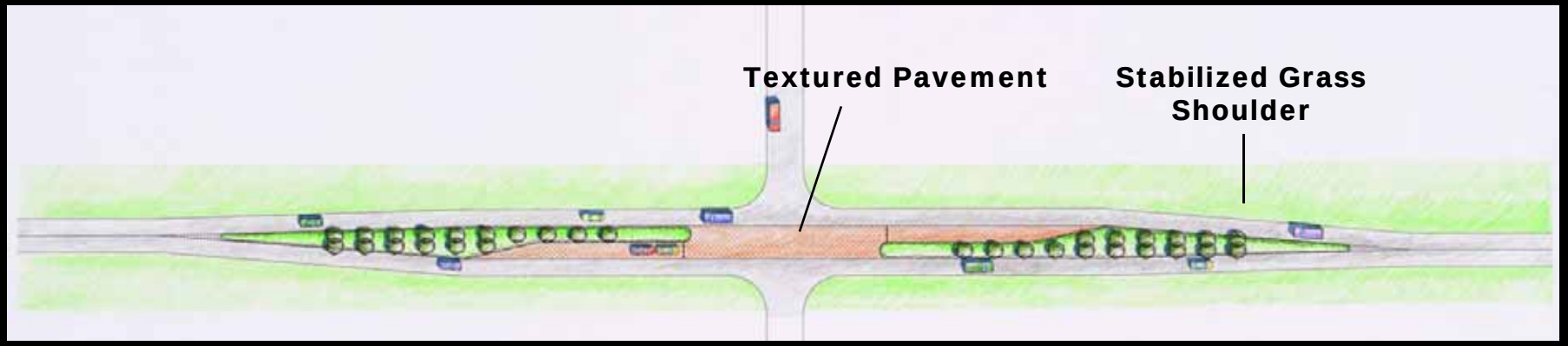
Rural Traffic Calming Measures

Roundabouts

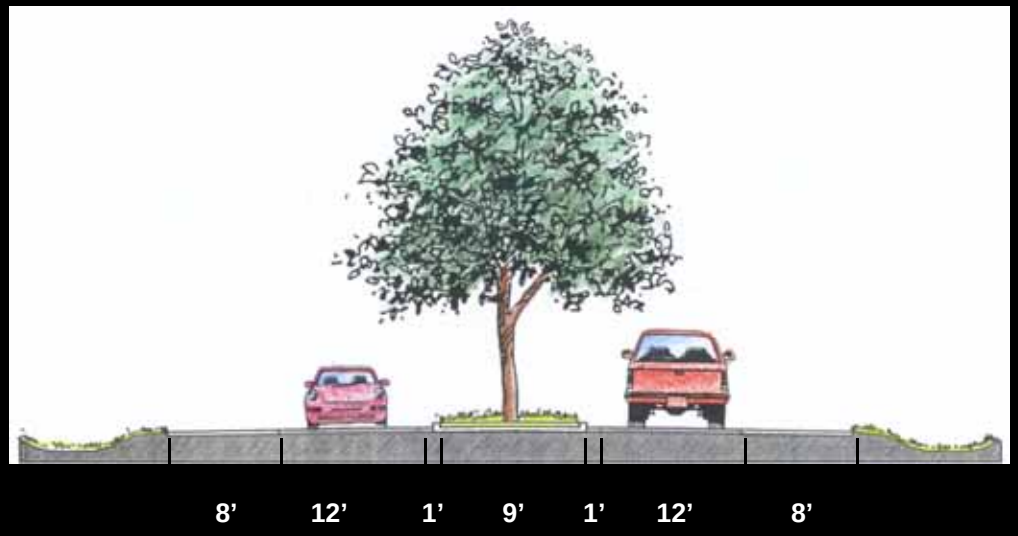


Rural Traffic Calming Measures

Wide Splitter Island

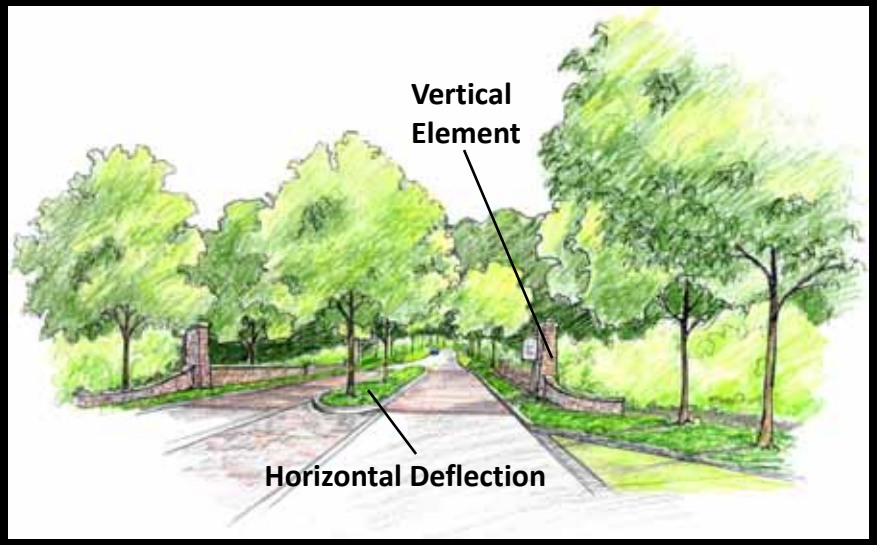


Narrow Splitter Island



Town Traffic Calming Measures

Entrance Features

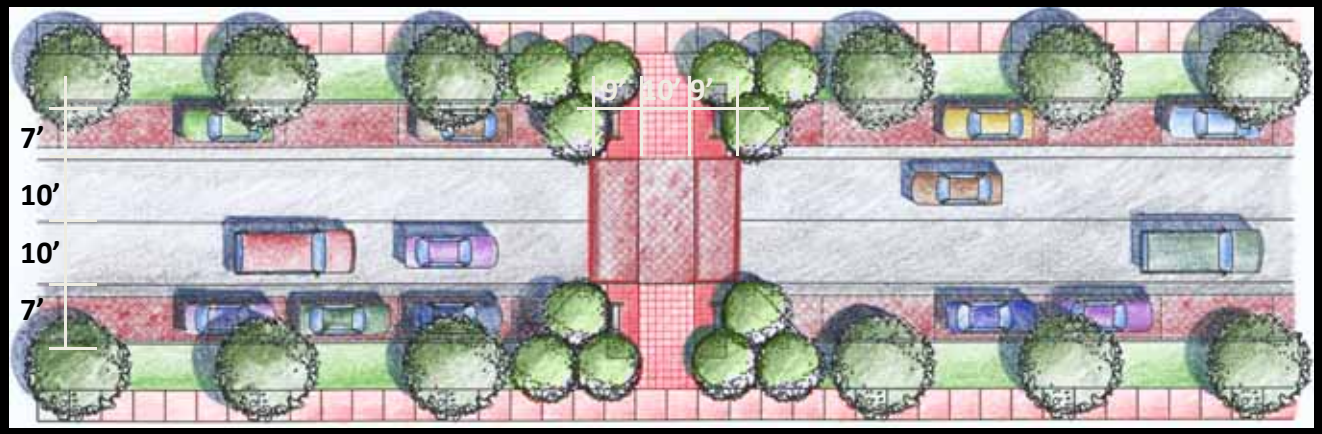


Streetscape Improvements

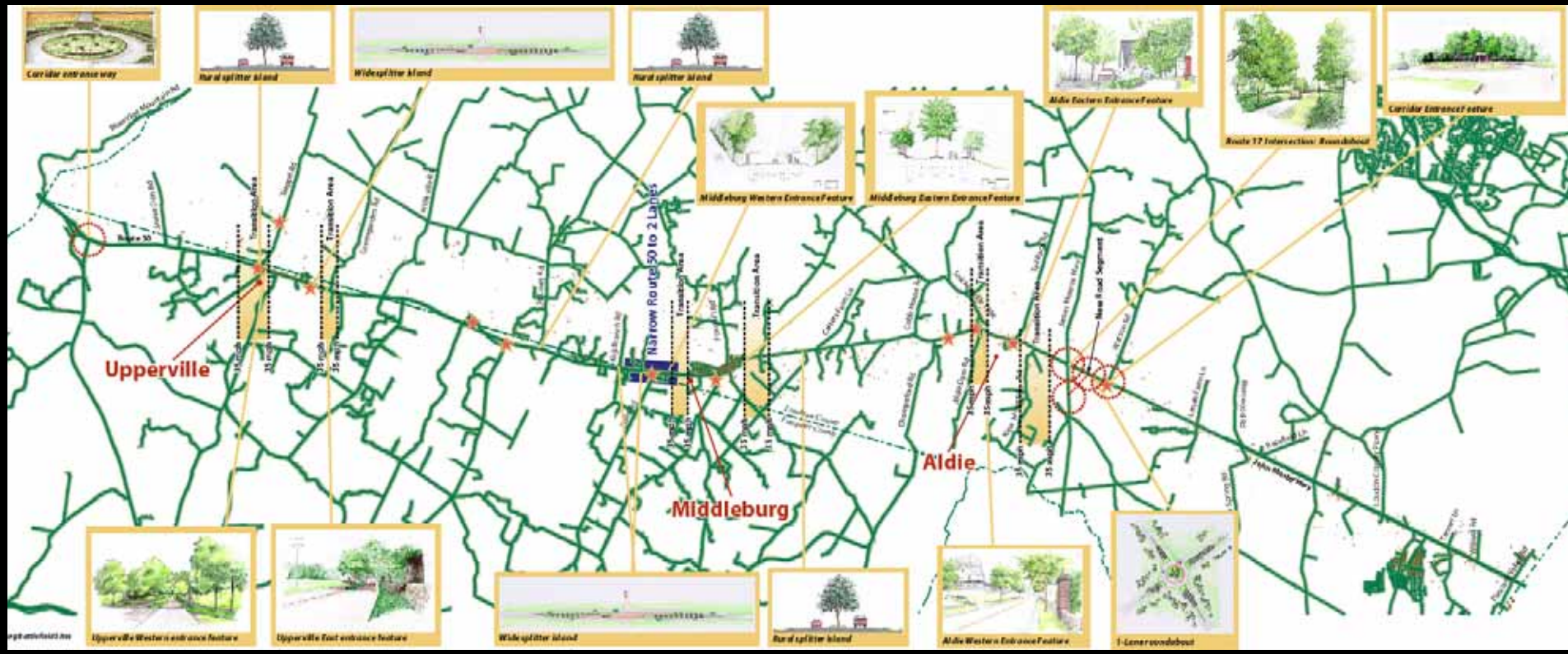
Town Traffic Calming Measures

In-Town Splitter Island

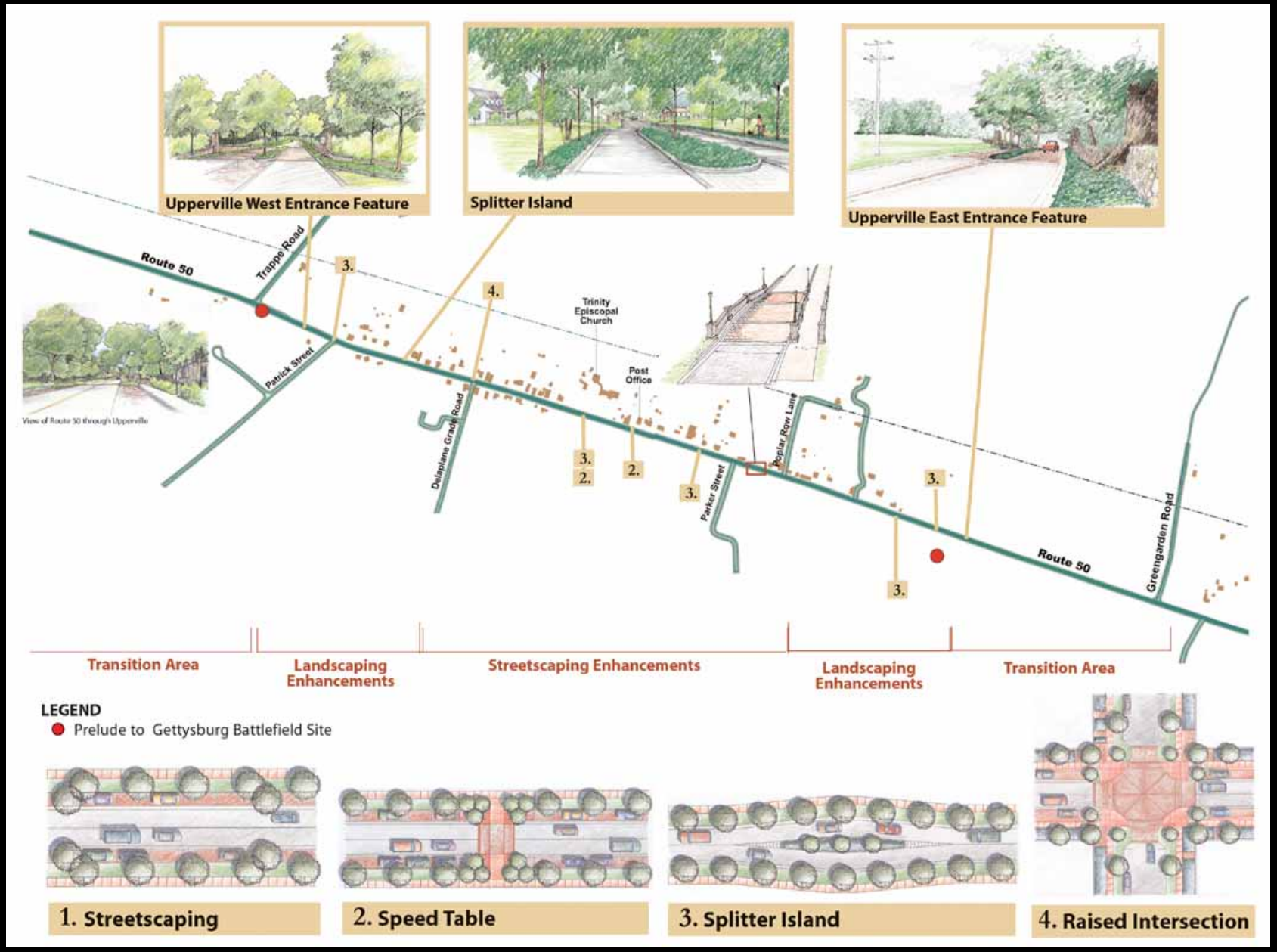
Speed Table



Corridor Management Plan: Rural Areas



Upperville


Upperville West Entrance Feature
Splitter Island
Upperville East Entrance Feature
Route 50
Trappe Road
Patrick Street
Trinity Episcopal Church
Post Office
Delapiane Grade Road
Parker Street
Poplar Row Lane
Greengarden Road
Route 50
3.
4.
2.
View of Route 50 through Upperville
Transition Area
Landscaping Enhancements
Streetscaping Enhancements
Landscaping Enhancements
Transition Area
LEGEND
Prelude to Gettysburg Battlefield Site
1. Streetscaping
2. Speed Table
3. Splitter Island
4. Raised Intersection

Meeting The Goal

Preserve open space and farmland

Technical Discussion #4
Speed and Design?

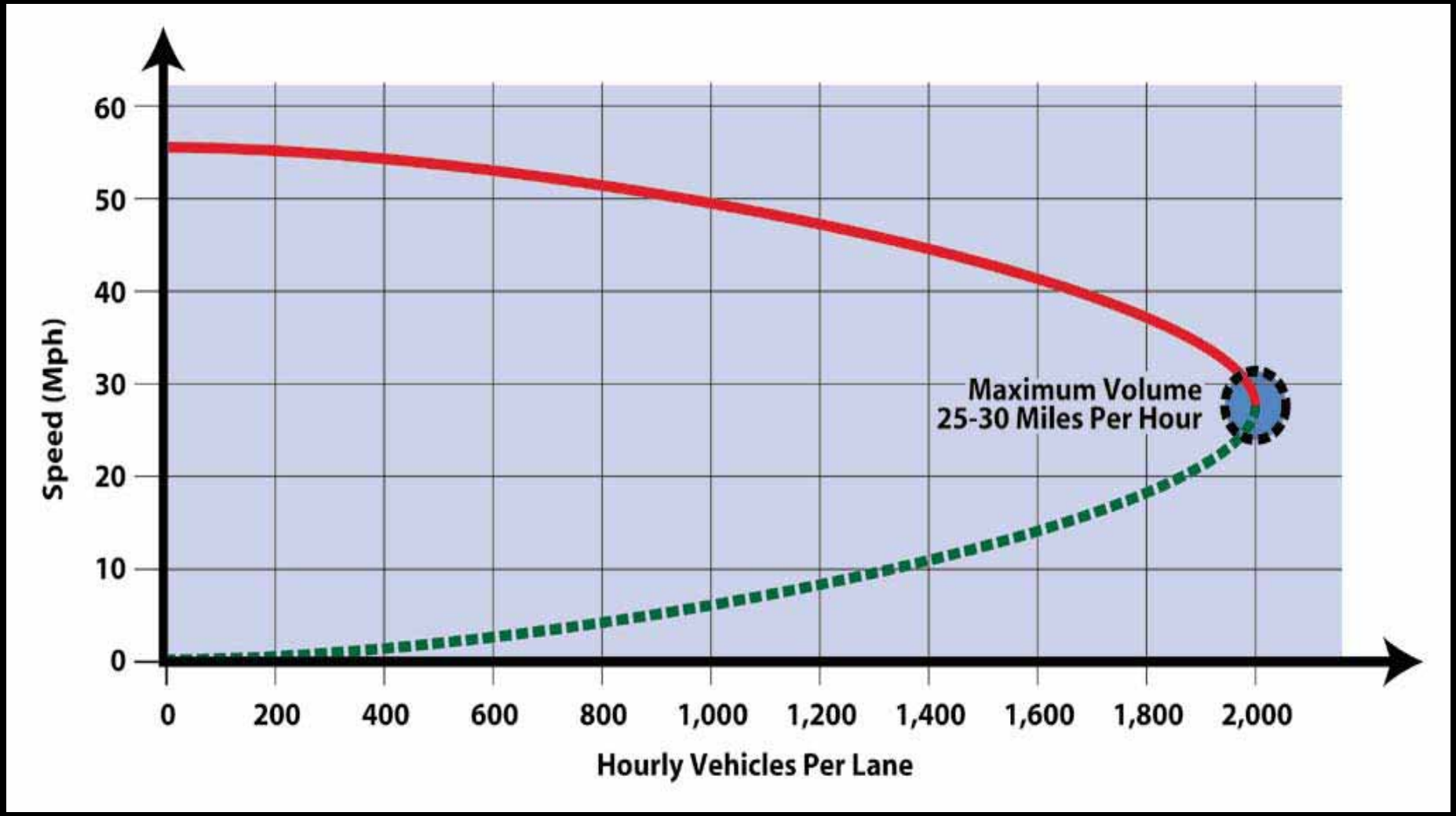
Why Do We Design High Speed Roads?

Why Do We Design High Speed Roads?

To Move More Cars?

Why Do We Design High Speed Roads?

To Move More Cars?



Source: Highway Capacity Manual

Why Do We Design High Speed Roads?

Because It’s Safer?

Why Do We Design High Speed Roads?

Because It's Safer?

For Pedestrians?

Vehicle Speed	Percentage of Pedestrian Fatalities in accidents
15 Mph	3.5%
31 Mph	37.0%
44 mph	83.0%

Source: National Highway Traffic Safety Administration
Federal Highway Administration

For Drivers?

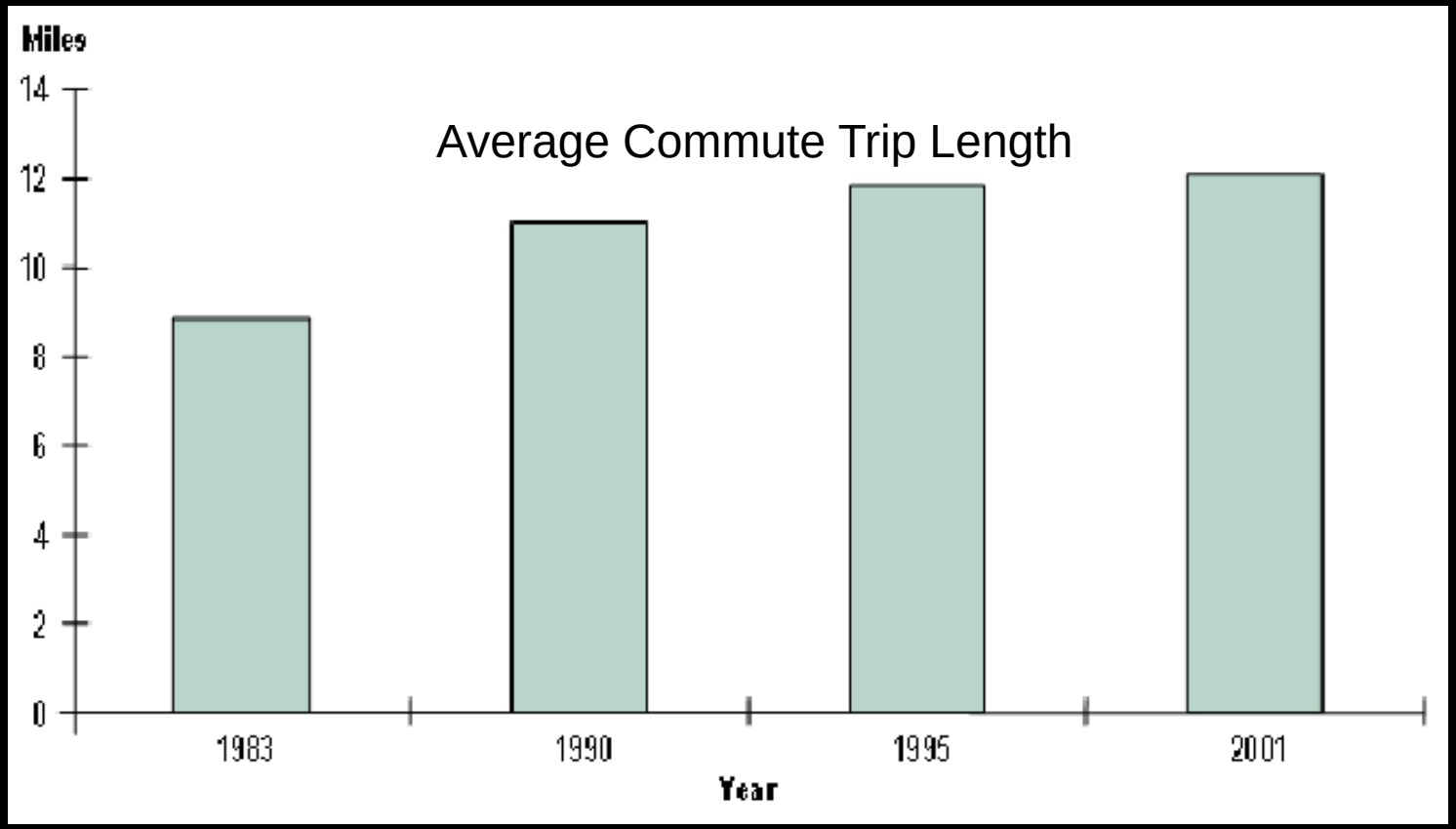
Vehicular Crashes Increase With The Average Speed Of Traffic

Why Do We Design High Speed Roads?

So That People Can Move Farther From Their Jobs?

Why Do We Design High Speed Roads?

So That People Can Move Farther From Their Jobs?



Source: Federal Highway Administration

Pedestrians and bicyclists...